

YARD OPERATION AT TEMPLE MILLS

See Advert Page 14



"THE TIMES" OF THE TRANSPORT WORLD

TRANSPORT IN AND TO NORTHERN IRELAND

See Pages 2, 3 and 9

VOL. LXXXII No. 2107

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LONDON, OCTOBER 3, 1959

PRICE NINEPENCE

CURRENT TOPICS

Road Operator Leases Rail Site

SOMETHING rather rare in the annals of road and rail transport occurred last week at Kings Lynn but it was something which could have a big future. The Mayor of Kings Lynn, Councillor W. R. Wildbur, formally opened the first completed section of a large dry goods and cold storage depot on the site of a redundant railway freight depot. The unusual feature was that the site was leased by British Railways to the Pointer Group, of Norwich, which numbers road haulage among its primary activities. The initiative in this welcome rapprochement between road and rail came from the Pointer side, and arose out of the specialised demands of a new food factory nearby, but the warehouse could not have been erected in the amazingly short time of 10 weeks, nor indeed at all, if the local management of British Railways, profiting by the freedom of negotiation which decentralisation has conferred, had not acted with promptitude. As it was, the necessary negotiations with the railways were completed within the space of one month. All three parties, manufacturer, warehouse and transport operator, and the Great Eastern Line, seem well satisfied with the result of their endeavours. What has been achieved at Kings Lynn has largely come about through the initiative and drive of the Pointer Group, under its young managing director, Mr. Peter Pointer, but it could well be repeated at many places elsewhere. It accords well with the pattern of modern railway operation and could herald a new chapter of fruitful co-operation between road and rail. A description of the new storage depot appears on page 13 this week.

Success in Scotland

AS was to be expected all those who participated in last week's annual conference of the Municipal Passenger Transport Association in Edinburgh were almost overwhelmed by the friendly hospitality of the Scottish capital. It is true that the weather did its best to mar the visit to the B.P. ocean terminal at Farnart on Loch Long, but the excellence of the arrangements made by Scottish Oils and Shell Mex, Limited, was such that the rain might almost have been part of the demonstration to remind us of what we have been missing in recent months. The other major visit—to the new Falkirk works of Walter Alexander and Co. (Coach-builders), Limited—was also a triumph of organisation and, on a smaller scale, Edinburgh Corporation Transport arranged an admirable little tour on the Thursday afternoon when Mr. W. M. Little, the general manager, took a party round the Shrubhill works, which are in process of a complete reorganisation with a new basis of bonus working, and the garage at Longstone to which had been taken the various experimental vehicles which the transport department now has in service. Among them was the 47-seat Tiger Cub with three-and-two seating at the rear of the bus. It might also be added that many of the visitors, who were certainly bus-minded, commended the smart appearance of the Edinburgh vehicles even if they also spoke enviously of the unpolluted air in which they worked. The social events were, as usual, greatly enjoyed and there was widespread appreciation of the work of all those who contributed to the success of the 58th annual conference of the M.P.T.A.

Boost for Coal

ON November 3 and 4 the Combustion Engineering Association is staging a conference at Scarborough to discuss the application of mechanical firing and automatic controls to the smaller types of solid fuel-burning industrial boiler plant. While such application is not new, it is by no means in wide use and the object of the conference is to illustrate that when used efficiently, coal can compete as a boiler fuel with liquid and other fuels. Both technical and economic aspects will be discussed at the conference under the chairmanship of the association's president, Mr. S. P. Chambers, who is also

chairman elect of Imperial Chemical Industries, Limited, and a part-time member of the National Coal Board. Opening addresses will be given by Mr. R. H. E. Thomas, marketing member of the National Coal Board, who will state the case for automatic boiler plant and deal with the supply position of suitable coal, and by Mr. B. E. A. Vigers, deputy-chairman of Laporte Industries, Limited, who will give the industrialist's point of view and state the requirements to be met. Four technical sessions will follow, at which papers on fuel and ash handling, combustion, mechanical firing and

hazards of the oceans to the furthestmost regions of the earth in search of cargoes that would bring her owners a fair reward. From Singapore to southern China and Kanagawa in Japan, across the Pacific to Peru, and back via Cape Horn and Cuxhaven; it was two years before the *Araby Maid* and her master Captain Pennie returned to their home port of Leith. This was the first voyage of a ship of William Thomson and Company to the Far East, and it opened up an avenue of trade that has continued to prosper for one hundred years. To commemorate this notable centenary the company—better known now

6 per cent to enable it to overcome temporary difficulties and also loans for the purchase of equipment—the airline has, since its association with B.O.A.C., purchased more than £5½ million worth of goods and services from Britain. Obviously it is in the interests of all parties that the present situation should be cleared up and it might also be of long-term benefit if the position of British European Airways in the Middle East was clarified, since it seems at the moment to be operating for its associates routes which compete with those of the B.O.A.C. camp.

Engines Old and New

MODERN technology is giving new prominence to two primary power sources—the external-combustion or hot-air engine and the fuel cell—both of which were first conceived over a century ago. A workable but quite uneconomic hot-air engine was built by Robert Stirling, a Scottish clergyman, as long ago as 1816; with only desultory interest since then, recent advances in thermodynamics and modern mathematical analysis have enabled the Allison Division of General Motors (under an agreement with the Phillips Company, of Eindhoven) to develop the basic principle up to a present efficiency of about 40 per cent. A laboratory model of the new engine, which could use solar, nuclear or chemical energy as fuel and could operate unattended for very long periods, has already operated successfully at the Allison Research and Development Centre and it is claimed that a Stirling-cycle engine of 1 cu. in. displacement is capable of producing 1½ h.p. The fuel cell, which converts the chemical energy of oxidation directly into electrical energy, has recently come into prominence after the lapse of about a century since its conception through the work of Dr. F. T. Bacon at Cambridge University. The Bacon cell achieves reasonable efficiency using hydrogen as a fuel, but on the grounds that hydrogen gas is inconvenient and expensive in comparison with oil, gas or coal, the Esso Research and Engineering Company, at its centre at Linden, New Jersey, is exploring the possibilities of the fuel cell employing petroleum-type materials.

A Notable Bus Pioneer

ANOTHER link with bus operation before 1914 is severed by the death last week of Mr. William Percy Allen, as announced elsewhere in this issue. Of recent years he had been a director of the Aldershot and District Traction and East Kent Road Car companies; he was for a number of years chairman of the Lincolnshire Road Car Co., Limited. Since he took a less active part in bus development he had been interested in farming in Wiltshire. When a young man he inaugurated a large number of bus services in various parts of the country, including Central London, Mersea Island, and Farningham in Kent. The last-mentioned business, founded in 1913, was transferred to the East Surrey Traction Co., Limited, in 1922. The London business was operated from 1913 to 1916 (as Allen Omnibus Co., Limited, from 1914) with shaft drive Straker-Squire vehicles and bodywork of Mr. Allen's own design. These buses, in a distinctive laurel green livery, were operated in conjunction with those of the then Premier undertaking which used De Dion chassis, mainly on a Liverpool Street—West Kilburn service. Mr. Allen was associated over many years with London and South Coast Motor Services (originally formed in 1905) operating around Folkestone and subsequently with the East Kent Road Car Co., Limited. Excursion coaches of London and South Coast operated as Silver Queen for a time. He also inaugurated Silver Queen bus undertakings at Clacton (which passed to Eastern National) and in Lincolnshire; it was this last undertaking which formed the nucleus of the Lincolnshire Road Car Co., Limited, in 1928. He had a penchant for using airfields as garages; a former airship shed served at Capel le Ferne near Folkestone and aircraft hangars constituted the headquarters (just rebuilt) of the Lincolnshire business at Bracebridge Heath.

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automatic control equipment will be presented and discussed. A final session will be devoted to an economic assessment of modern equipment. The conference is open to non-members.

Farewell to Croydon

DESPITE intervention of a world war, not so long seems to have elapsed since a member of the MODERN TRANSPORT staff nearly lost his gumboots in the mud of Croydon Airport on its opening day as a civil aerodrome, March 29, 1920. This newspaper even then suggested the need of a rail connection to make city to airport transit satisfactory, a well-justified piece of foresight as yet unfulfilled. Now the last operations have taken place from Croydon, which officially closed on September 30. A farewell tribute from the pen of Mr. Peter Masefield appeared in *The Times* of that day. It has been "a cross-section of aeronautical history throughout the past 43 years. Since the war Croydon has become a centre for the lighter forms of aviation; charter and executive flying, club activities, and a thriving repair and overhaul base. In 1957, there were more than 76,000 arrivals and departures at Croydon—exceeded in the United Kingdom only by London Airport and Southend. But, most of all, Croydon will be remembered as the London airport for Imperial Airways, together with the great European companies, Air Union and Air France, K.L.M., D.L.H., and Sabena. The shades of their A.W. Argosies, H.P. Heracles, Farman Goliaths, and Fokker F.VIIs will surely flit noiselessly across the deserted field as darkness falls." He made a plea for the gap it leaves to be filled in the interests of British aviation and future export business. New York has 12 aerodromes within 12 miles of the centre and Paris eight. London had Croydon. The next Government must set this right.

The Voyage of "Araby Maid"

WHEN the 329-ton wooden barque *Araby Maid* sailed from Alloa on September 24, 1859, she was bound for Singapore with a cargo of coal, and thereby hangs a tale. Like many another small ship of her time she was a trader, destined to brave the

as the Ben Line—arranged on September 24 a small and probably unique exhibition in the wheelhouse of its modern turbine vessel *Benurackie* at the Royal Victoria Docks, London. Among the items on display were ship models, charts, account and log books dating from 1844, including the original voyage book of the *Araby Maid*. It is amusing today to read that half a dozen cutlasses were purchased for 3s. 3d. each, and that she carried two cannon which cost £11 10s. 0d. and 24 cannonballs at 18s. per cwt. Today this modern fleet of 22 ocean-going vessels still retains much of its past distinctive character, and perhaps its proudest claim is to be one of the oldest shipping companies in the world in continuous private ownership. The managing company continues to be controlled by the direct descendants of the two brothers Thomson who began business in Leith 134 years ago.

Clearing the Middle East Air

ONE of the results of the sudden dissolution of Parliament has been to delay publication of the report of the British Overseas Airways Corporation for 1958-59, but it is widely accepted that this will show a very substantial loss. It is also thought that losses by associated companies will be put forward among the main contributory causes and some reference was made to these in a debate in the House of Commons last July. Particular criticism was directed then at the affairs of Middle East Airlines and recently the chairman of that concern, Sheikh Najib Alamuddin, came to Britain to discuss matters with B.O.A.C. He has also, very reasonably, taken the opportunity to clear up various misunderstandings that had arisen and has offered to buy the corporation's 49 per cent interest in the airline and to repay loans. This offer has been refused. It was to be expected that last year's trouble in the Lebanon and other uncertainties in the Middle East such as the revolt in Iraq would have an adverse effect upon the affairs of the airline, but there has latterly been a marked improvement in traffic and the Sheikh expects to show a profit at the end of the current year. In fact the M.E.A. bears its own losses and the assistance from B.O.A.C. has been limited to loans carrying interest at



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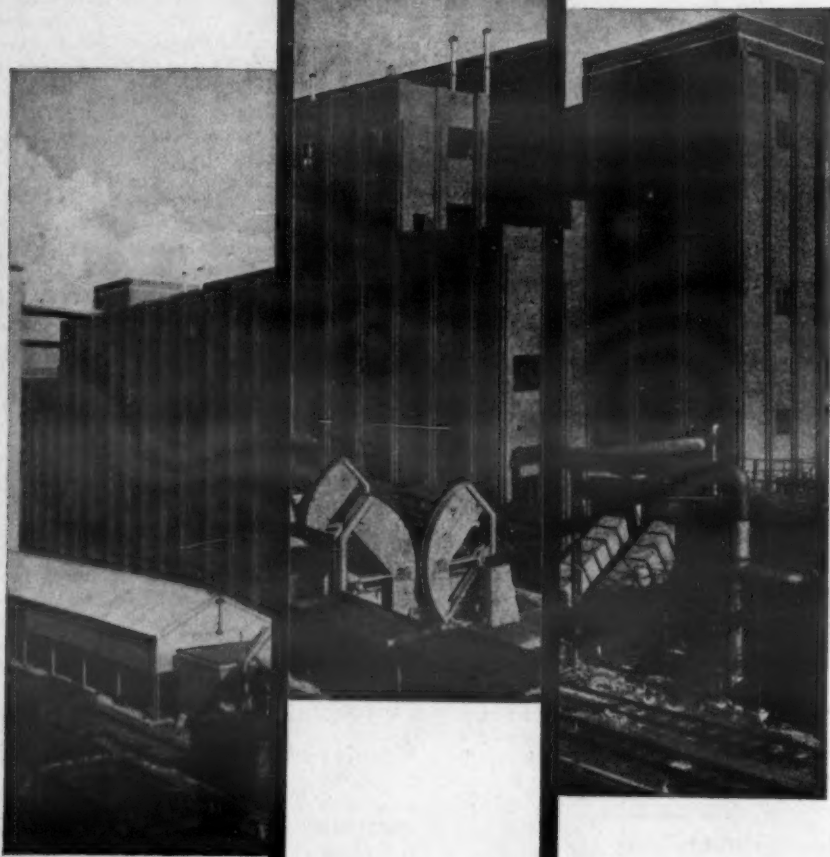
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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Ulster Transport and the Public

PROBLEMS of transport in a small, thinly-populated country, mainly engaged in agricultural pursuits, are always difficult and Northern Ireland is not exceptional in this. Although at the end of the nineteenth century the Belfast and County Down and the Belfast and Northern Counties (soon to be purchased by the English Midland) were paying ordinary dividends of the order of 6 per cent, road vehicle competition and changes in trade materially altered the situation in the present century and practically all the railway operations in the Six Counties are now carried out at a loss. On the road side unregulated competition during the 1920s brought chaos in haulage and bus operation that was only resolved with the formation of the Northern Ireland Road Transport Board in 1935. That body was subjected to a good deal of illegal competition from farmers and ancillary users during its existence, which came to an end in 1948 with the formation of the Ulster Transport Authority. Designed to merge road and rail activities the new body took over the Belfast and County Down Railway—by then almost moribund—and later acquired from the British Transport Commission the Northern Counties Committee lines formerly owned by the L.M.S.R. The U.T.A. made a trading profit of £52,000 in its first year, but the N.C.C. railway was not vested in it until April 1, 1949, and in the second year this was reflected in a loss of £213,000 on trading and, after allowing for loan charges and an income tax credit, in a deficiency of no less than £379,000.

Exposition of Policy

OVER the past three decades the Northern Ireland transport situation has been the subject of controversy which has given rise to inquiries, investigations, Parliamentary discussions, the setting-up of committees and the passing of Acts of Parliament. The last of these, in 1958, provided for the merging in the U.T.A. of the Northern Ireland portion of the Great Northern Railway with the intention that by September 30, 1964, the undertaking should be financially stable. The burden upon the U.T.A. in carrying out its allotted task has been heavy and it has incurred a good deal of public criticism. Wisely feeling that only if it secures the goodwill of those it serves can it be truly successful, Mr. George B. Howden, chairman of the U.T.A., has issued a booklet, *Aspects of Relations between the Public and the Authority* (U.T.A., 21 Linen Hall Street, Belfast), setting out the plain story of the framework in which the undertaking works, its policy, what has happened and why losses have been incurred; this has been given a very reasonable reception in the Press. A good deal

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of the argument has been recounted on previous occasions in MODERN TRANSPORT, but some recapitulation is worth while if only because Mr. Howden's essay in public relations exemplifies how public transport can be misunderstood by the very people his officers are taking pains faithfully and efficiently to supply with facilities at low cost.

The Railway Problem

IT appears that the total loss incurred by the U.T.A. since 1948 to September 30, 1958, is £2,461,783, of which no less than £2,121,327 is in respect of loan charges. The aggregate working loss on the railways alone in that period was £2,472,149, before providing for loan charges. Therefore, had there been no railways, the Authority would have been able to discharge its duty to balance its accounts, taking one year with another. The railway capital is plainly incapable of being remunerated, yet every railway closure is met with violent opposition, which, if anything, increases as the years go on. So far, excluding the G.N.R., 158 miles, or 49 per cent, has been shut. Restrictions on the road services, it is cogently pointed out, would not assist the railway, but would cause great inconvenience, and examples are given of how the working cost would be increased if road services were made mere feeders to the railway. In fact there is evidence that the longer road services carry few through passengers. On the other hand, despite every economy, and the satisfaction of knowing that the diesel railcar services of U.T.A. inspired the B.T.C. interest in such units, the 12-mile Bangor line (where conditions favour the rail route) is the only one that operates satisfactorily financially. The railway position is greatly complicated by the Government decision to transfer the Great Northern Railway Board undertaking to the U.T.A. In the last year of G.N.R. Board operations working losses in Northern Ireland of the G.N.R. were £346,680, or £625,097 after provision for interest charges. This is a heavy additional burden on the funds and the G.N.R. bears heavily on the U.T.A. in respect of statutory obligations.

Refutation

THE booklet refutes the charge that the U.T.A. is dictatorial, pointing out that many of its actions need the approval of the Transport Tribunal and that it has always sought to explain future arrangements to local authorities. Also refuted is the charge of extravagance. Gross capital expenditure over the decade has been £5,242,000; £717,000 has been realised from redundant assets, and out of revenue £5,177,000 has been found for depreciation and renewals. Included in the first figure given is £600,000 for the Duncrue Street shops, essential as a renewal of three obsolete works taken over, and £200,000 on new headquarters at Linen Hall Street in place of inconvenient and widely scattered offices, one of which was rented. The money spent on the hotels has been justified by the returns obtained, apart from their value to the province. In respect of its own undertaking the U.T.A. has no outstanding borrowings whatever—a respectable achievement in view of the loan interest paid. The Authority has, however, still to repay the government the £3,561,405 representing the sums advanced to the Great Northern Railway Board, which, under the 1958 Act were cancelled as between the Board and the U.T.A. The Authority is also responsible for interest on the G.N.R. Board's capital liability to the Government. In fact, despite allegations to the contrary, the N.I. Government has not been at any actual loss on transport. Few undertakings have been subjected to such a barrage of criticism as the U.T.A. This timely booklet shows much of it to be unjustified and is a useful step on the way to good public relations. We hope it is read and taken to heart. The comparative success of the U.T.A. in difficult times is proof of constructive and efficient work by its staffs, to whom continued denigration must be disheartening, to say the least. It would be better for its owners, the public of Northern Ireland, if the Authority could be left unmolested for a time to prove its worth, without ill-informed sniping and threats of severance of vital sections of its business.

MODERN TRANSPORT has an arrangement with *Reuter's Trade Service* whereby publication is made in this newspaper of all essential news from all parts of the world concerning traffic and transport by rail, road, sea and air and allied interests.

NEWS SUMMARY

LONDON to Moscow in 60 hours by Ford Thames Trader-Duple coach is the aim of an experimental coach trip, organised jointly by the Ford Motor Co., Limited, and Excelsior European Motorways, of Bournemouth, which was due to leave from Victoria Coach Station, London, on Friday evening, October 2.

Diesel trains are to take over progressively from steam on the St. Pancras-Bedford line of the London Midland Region; the full timetable will be introduced on January 4 next year. Semi-fast trains will cover the 50 miles in 70 min. A special train was welcomed at Bedford on Monday this week by the Mayor, Alderman C. A. Barrott.

Colchester Station, Great Eastern Line, Eastern Region, which was being rebuilt at the outbreak of war, is to be completed to meet electrification needs.

We regret to announce the death of Mr. William Percy Allen, a director of Aldershot and District Traction Co., Limited, and East Kent Road Car Co., Limited, and a former chairman of Lincolnshire Road Car Co., Limited. A notice appears on page 15 and a memoir on page 1.

The next annual conference of the Municipal Passenger Transport Association will be held in Douglas, Isle of Man.

Miss Jayne Mansfield performed the opening ceremony of the Chiswick Flyover—part of the new Great West Road route from Kensington to London Airport—on September 30. Croydon Airport closed on September 30.

THE NEW FACE OF NORTHERN IRELAND

Transport Ferries Serve Many Industries

WORK OF DEVELOPMENT COUNCIL

FREIGHT services to and from Northern Ireland have during the past decade improved both in quantity and quality to the extent that few if any areas in the world separated from their main markets by a short sea crossing can enjoy better facilities. The explanation of this impressive extension of existing, and development of new, services is not hard to find. It arises out of, and is closely linked with, the successful efforts of the Northern Ireland Development Council to attract new industry to that part of the British Isles.

The Northern Ireland Development Council, whose chairman is Viscount Chandon, is a creature of the Ministry of Commerce there; the Ministry administers legislation concerning industry and negotiates financial and other inducements offered to new and expanding manufacturers; the Council undertakes publicity and shares initial promotional work with the Ministry. The need to provide new avenues for employment arises, of course, from the high proportion of those workless in Northern Ireland compared with areas in Britain. The population is up from 1,256,000 in 1937 to 1,402,000 last year and is still rising, but the current unemployment rate is about 9 per cent compared with 2 per cent in Great Britain.

New Industry—New Life

This should not, however, obscure the fact that the Six Counties now have 25 per cent more in work than in 1939. What has happened is that the linen industry, always the main manufacturing industry, has paid off 8,000 workers since 1949 and is now down to about 43,000 and agriculture, under the compulsion to mechanise, has contracted its workers by 29,000 in the same period. Government financial and other assistance has been instrumental in bringing no fewer than 138 new businesses to the country since 1945 (55 of them have expanded beyond their original plan) and the total employment eventually expected from these plans is for 51,000. Big names, such as A.E.I., Courtaulds, Dupont, Metal Box, I.C.T. and Lotus (shoes) are now settled in Northern Ireland.

By means of facilities extended through the Development Council we were recently able to inspect the many transport services now on offer across the Irish Sea. Most of these services have

consists of Mulberry harbour units. The tonnage of imports and exports here has shot up from 147,000 tons in 1947 (before the ferry started) to 663,000 tons last year.

Transport Ferry Service

In its 11 years of operation the pioneering Transport Ferry Service (B.T.C.-controlled through British Road Services) has increased its annual cargo from 5,000 vehicles and containers, representing 20,000 tons, to 46,000 vehicles and 350,000 tons and the number of weekly sailings has risen to seven. The new 3,000-ton m.v. *Ionic* Ferry currently maintains the six-times weekly Preston—Larne route, accompanied by the *Empire Nordic* and the *Empire Cymric*, with sailings once weekly between Preston and Belfast. A broad outline of the development of the Preston—Larne service of this line appeared in our September 28, 1957, issue.



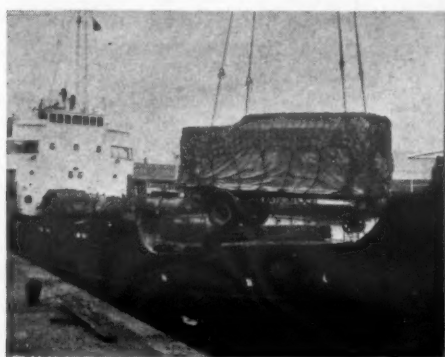
A.C.C.S. containers being handled at Larne harbour

Fourteen scheduled sailings a week are mounted by Anglo-Continental Container Services (also B.T.C.-controlled) between Larne and Preston or Ardrossan, Sundays excepted. This company has four chartered ships built to its own requirements and was the first to specialise on container services to Northern Ireland. It owns its own containers and has a very large number in service, most of them of 10 tons capacity or more. The latest ship, *Goodwill*, was described in our June 7, 1958, issue when reference was also made to the new lightweight aluminium alloy containers the company was receiving. A special side door loading container has been designed for the company to afford easier and compact loading of palletised freight.

Coast Lines Operations

Since its inauguration early this year the Liverpool—Belfast trailer and container service offered nightly in either direction by Link Line, Limited (a Coast Lines company) has gone ahead of expectations (see MODERN TRANSPORT, January 31, 1959). The target was 2,000 tons a week by the end of the year but this total was passed at the end of six months. Two ships, *Pointer* and *Spaniel* are at present employed and there are several other Coast Lines ships which could be diverted to the service when the need arises. In addition, the new *Yorkshire Coast*, for the Tyne-Tees Steam Shipping Co., Limited, will be available if required for the movement of very heavy pieces. She has been specially designed with this purpose in mind—her 90-ft. long hatch must be one of the largest afloat. She has a deadweight capacity of about 1,000 tons.

Other Coast Lines normal cargo services are maintained nightly between Belfast and Glasgow, the operator being the Burns and Laird Lines,



A semi-trailer comes out of a Link Line ship at Belfast—note special spreaders passed beneath chassis frame; right, Douglas Tugmaster tractors are used at both Liverpool and Belfast to position trailers in the ships' holds

already figured in the pages of MODERN TRANSPORT but the present is an opportunity to present a global picture and to highlight their latest features.

Harbour Improvements

Something like £5 million has been expended by the Belfast Harbour Commissioners on improvements to this vital gateway. New transit shed accommodation covering 224,500 sq. ft. of ground is being provided, increasing the previous shedded area by 23 per cent, 13 new level luffing cranes have been installed and a 200-ton crane erected on Stormont Wharf, on the north side of the Victoria Channel (with sufficient water for ocean-going vessels), to handle heavy pieces such as are expected to emanate from the A.E.I. works at Larne. Sinclair Wharf and transit shed provide new facilities for foreign trade and the existing Herdman Channel Wharf is being extended by 1,215 ft. and all cargo vessel services of British Railways will be concentrated at these new berths, which will have ample open space for the handling of containers. The latest addition to facilities is three bulk storage tanks for imported molasses in the manufacture of feeding stuffs.

Larne Harbour Company now has quay space totalling half a mile for handling ferry vessels and either containers or wheeled vehicles and one of the loading ramps for the Transport Ferry Service will carry loads of up to 120 tons. It is not generally realised that part of the quay at Larne

Limited, which also runs to Ardrossan nightly, and to Greenock, while the Belfast Steamship Co., Limited, carries smaller, 3-ton containers on the Liverpool service maintained by its *Ulster Monarch* and *Ulster Prince*, also general cargo.

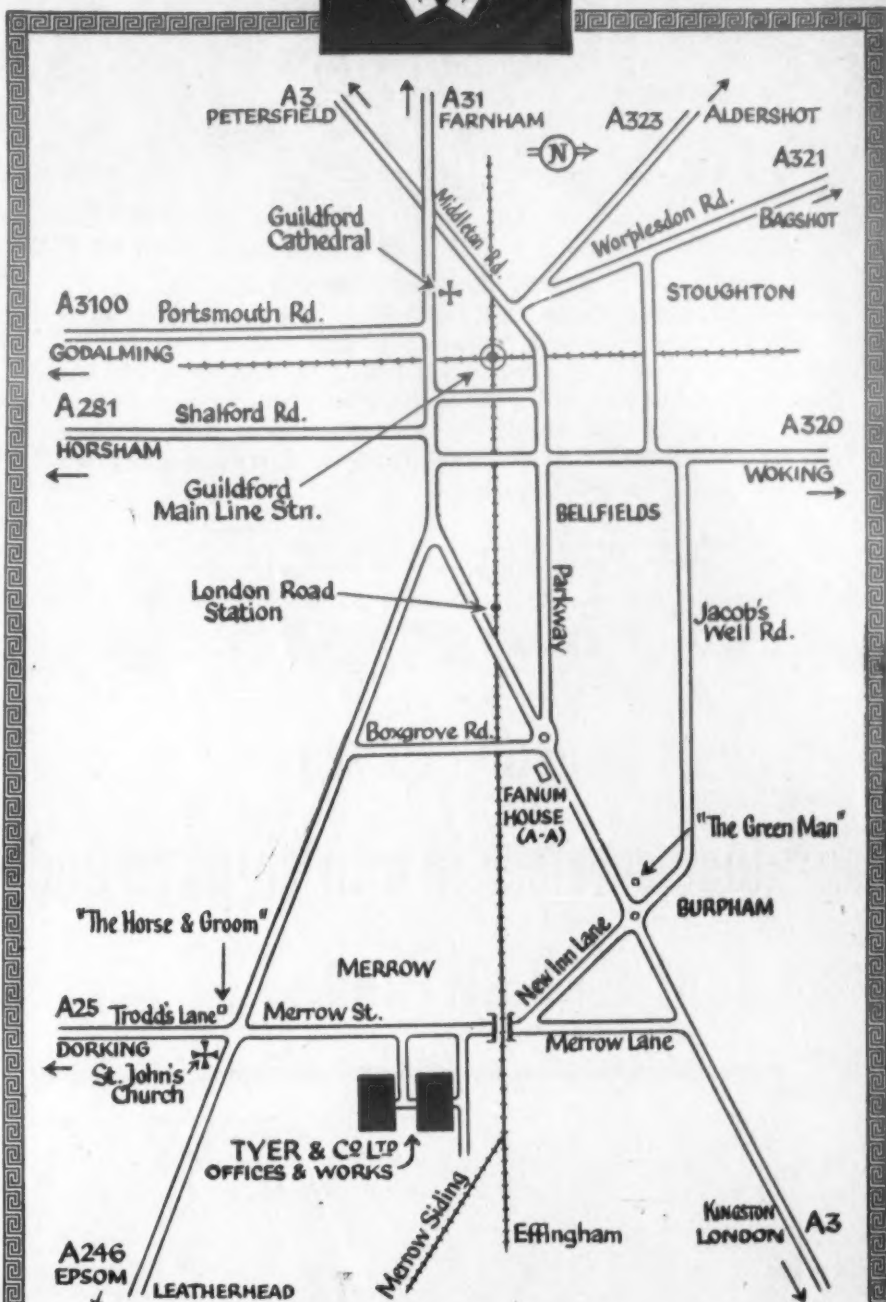
Road Services

Three road tank fleets are wholly-owned by Coast Lines; these are Thomas Allen, Limited, of London, E.I. (which has an extensive general haulage business also), A. S. Jones and Co., Limited, of Liverpool, and John Forman, Limited, of Newcastle upon Tyne. Between them these three companies operate over 200 bulk liquid tankers over the roads of Britain. At Liverpool new bulk storage tanks for imported edible oils have been erected for A. S. Jones, Limited, at Trafalgar Dock.

Northern Ireland Trailers, Limited, largest independent road operator on the Irish route, has been owned by Coast Lines since 1958. This company employs some 44 motive units at the English end and has some 275 semi-trailers passing on the ferry vessels, also a large number of containers. Services are operated between Larne and Preston and between Larne and Ardrossan. About 60 of the semi-trailers have been modified so that the flat platform body may be removed, with or without the load, thus saving weight on the ferry section of the journey. Empty flats, as they become, can conveniently be handled in stacked (Continued on page 5)

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LORRY—BUS—COACH

I.R.U. Guests of R.H.A.

ON Monday and Tuesday this week section II of the International Road Transport Union (I.R.U.), which is concerned with public road haulage, held its first meeting in London at the invitation of the Road Haulage Association. Delegates were welcomed by the Earl of Gosford, spokesman for the Government on transport matters in the House of Lords. Lord Gosford told them that the volume of international transport between this country and the Continent was happily steadily increasing and that fact was symbolised by the holding of the session here and by the active part that was played in the discussions of the I.R.U. organisation by the British national associations. He mentioned that British Road Services was now affiliated to I.R.U., also that discussions were going on in Paris within O.E.E.C. and the Conference of European Ministers of Transport to facilitate international traffic. In these the I.R.U. played a very valuable part.

At an informal dinner, Mr. R. N. Ingram, chairman of the R.H.A., said that they realised that major problems arising in connection with the expansion of international road transport could only be settled by joint consultation with the other countries concerned. Through their delegates to I.R.U. they were more closely in touch than ever with the road-haulage problems of other countries. "We believe that the expansion of international road transport should be encouraged. We realise that difficulties of licensing, dimensions of vehicles,

could have replaced anything that was lost or damaged.

The furniture and fittings were drawn from many famous collections in various parts of the country—including those at Hampton Court, Buckingham Palace, the Victoria and Albert Museum, Osterley Park House, and Brighton Pavilion. Packing was done on site and the cases loaded on to British Road Services trailers, in which they were destined to stay until they reached Paris, via the Tilbury—Antwerp ferry. To minimise risk of damage on the French pave, speed was restricted to 12 m.p.h. Each lorry was connected by radio-telephone. Mr. J. Posner, manager of special traffic, Hernu, Perron and Stockwell, Limited, was in charge of the whole operation.

Refund of Hackney Carriage Duty

BUS and coach operators who are entitled, under the Finance Act, 1959, to a refund of vehicle excise duty can now obtain application forms from their local taxation office, states the Ministry of Transport. Applications must be submitted in duplicate and should be accompanied by the registration book for each vehicle. Refunds are payable to holders of licences which were taken out before April 8 this year for vehicles seating more than eight persons in addition to the driver. The amount to be refunded is equal to one-twelfth of the difference between the annual rate of duty



One of two Austin B.M.C. 10-ton articulated refrigerated vehicles to distribute frozen foods to provincial depots. The 1,100 cu. ft. Bonallack body is insulated with expanded polystyrene and has a York Shipley refrigeration unit driven by a Ruston and Hornsby diesel engine

and other problems, may not be easily solved," added Mr. Ingram.

No statement was issued after the meeting, which concluded at midday on Tuesday, but it is understood that the agenda was a normal one, including time-honoured matters such as tariffs, vehicle weights and dimensions, "liberalisation" of transport and the international movement of palletised freight. The chair was taken by the president of section II, Herr Raucamp, from West Germany.

Fuel Tax: An Election Promise

AT Saffron Walden, Essex, on September 25, Mr. R. A. Butler, the Home Secretary, addressing a constituency meeting, said that a reduction in the fuel tax would be given priority in any future consideration of tax reductions. "But," he added, "I cannot prejudice a future Chancellor."

Theatre for Bus Company

KEIGHLEY Highways Committee is recommending that Keighley Hippodrome, purchased by the Corporation for £15,000 in 1958, be sold to Keighley-West Yorkshire Services, Limited, for the same figure. The Finance Committee is also recommending a loan of £15,000 to the company towards the cost of expanding and developing the Townfield Gate bus station, which adjoins the theatre.

Public Ready to Spend on Roads

ROADS came second only to old-age pensions in the list of things on which people in this country think the Chancellor of the Exchequer should spend any Budget surplus, the British Road Federation has told election candidates. The information is extracted from the report of a recent Gallup Poll published by the *News Chronicle*. Of the sample interviewed, 45 per cent of those who wanted a surplus spent elsewhere put pensions first, 20 per cent voted for roads, 17 per cent for health service improvements.

Test Case on Apartheid

RESISTANCE by Pietermaritzburg City Council to the official apartheid policy enjoined on municipal passenger transport was legally upheld by a judgment of the Supreme Court in Durban on September 25. The city council maintained that orders of the Road Transport Board to enforce full apartheid—reserving some buses for use of whites only and others for the use of non-whites—were not lawful. Exceptions to these pleadings were filed by the Transportation Board and, by dismissing these exceptions, the Supreme Court in effect upheld the city council's refusal to apply apartheid conditions. This was the first case of its kind to come before the courts, and it is regarded as a test which may affect the imposition of transport apartheid in other parts of South Africa.

Story of a £250,000 Consignment

RECENTLY completed was what must be accounted the most delicate packing and road forwarding operation of the year. It involved the shipment of some 176 pieces of furniture, 12 paintings, china, glass, wallpaper, fireplaces and three tons of flooring for the British Council exhibition of 18th-century English furniture at the Louvre in Paris and their subsequent return. The exacting task of packing and forwarding the exhibits was entrusted to Hernu, Perron and Stockwell, Limited (subsidiary of Thos. Cook and Son, Limited), which regards the operation as one of the most complicated that it has ever had to handle. Although insured for £250,000 the consignment was priceless in that no amount of money

appropriate to the vehicle at the old rate (i.e. the rate which was paid for the licence) and the new annual rate appropriate to the vehicle, for each complete month since March 31, 1959.

Nottingham Picture Brighter

A TOTAL of 143,784,000 passengers was carried during the year 1958-59 by Nottingham City Transport Department, a reduction of 3,083,000 or 2.1 per cent. The reduction was chiefly on trolley-buses, where the decrease was from 64 million to 61 million passengers, or 4.65 per cent. Traffic revenue increased by £75,830 from £1,940,966 to £2,016,796. No increase of fares was put into operation during the year but a full year's additional income was obtained from increases operating from February, 1958, which applied only for six weeks of the previous year. Construction of the new bus garage planned for Western Boulevard was deferred because of the Corporation's need to restrict capital expenditure. It is hoped the project will be started in 1960-61. An operating surplus of £3,722 has been used as to £2,228 to reduce the department's adverse balance from £15,899 to £13,671, and the remaining £1,494 was charged to capital account to cover expenditure in excess of loan sanction.

Dunlop Collapsible Tanks

COLLAPSIBLE containers made of rubber reinforced with nylon are now in production by the general rubber goods division of the Dunlop Rubber Co., Limited, at Manchester, for the conveyance of liquids in bulk. The containers, which are flat when empty, can be rolled up easily and strapped to the cab of a lorry, thus leaving it free to carry other goods on its return journey. When full, they assume a stable pillow shape, and can be held in position by means of either a tarpaulin secured by ropes, or a special nylon harness. They are comparatively light in weight, rot-proof and have a high degree of tensile strength, says the maker. The fabric is coated on one side with neoprene, and on the other with a variety of natural, sweetened or synthetic rubbers according to the liquid to be carried. The standard container is fitted with an adaptor for a hose fitting and this incorporates a non-return valve, through which it is filled and emptied. A small manually-operated release valve allows for the escape of any air introduced during filling. These Dunlop roll-up containers are at present to be available in capacities of 250, 500, 800 and 1,000 gal.

Bus and Coach Developments

Derby Corporation proposes a new service between Victoria Street and Coleridge Street (Sunnyhill Avenue) via Normanton Road, Derby Lane and Caxton Street. Prospect Coaches (T. Thompson and W. Davies), Ferryhill, applies for the licences of James Maude, Birmingham. Grenville Motors, Limited, seeks to cease running via Carnkie on its Falmouth—Camborne service. Provincial Garage (Leicester), Limited, applies for the excursions and tours from Leicester of W. H. Smith (Coal and Transport), Limited.

Municipal Results

Belfast.—Bus passengers fell in numbers from 106.1 to 104.8 million and trolleybus passengers from 79.3 to 87.7 million. Bus mileage was up from 9.4 to 9.5 million miles, but trolleybus mileage was reduced from 7.6 to 6.9 million. There was a net surplus of £88,867, of which the trolleybuses contributed £59,945. Sheffield.—The net surplus for the year was £10,831 (£24,810) on a gross surplus of £486,558, but the balance carried forward to next year is £109,487. Tickets issued were 245.7 million (£24.2 million). Dundee.—An estimated deficit of £14,327 was turned into a surplus of £3,535, thanks largely to the Budget concession on p.s.v. taxation. Leeds.—There was a record passenger revenue of £3,228,087, although the number carried fell from 208.4 to 205.5 million. Some part of this drop may be due to the growth of cross-city services. As a result of the surplus for the year the accumulated deficit has been reduced from £807,384 to £157,053. Portsmouth.—Passengers dropped from 60.0 to 56.4 million, and mileage run was reduced from 6,648,000 to 6,460,000. The net surplus was £34,066.

FRAMELESS SEMI-TRAILER

Introduced by York Trailer Company

SENSING that the pattern of British road transport operation is following that already established in North America, York Trailer Co., Limited, has recently introduced a range of large semi-trailer vans for sale in British home and export markets. The vehicles are notable for being of frameless stressed-skin construction, providing very low tare weight for given capacity. This type of vehicle is now widely used in North America and is said currently to account for over 50 per cent of the goods vehicles in use compared with 20 per cent immediately after the war.

The trends which York Trailer Company has observed, which have led it to believe that the lightweight semi-trailer van will find growing

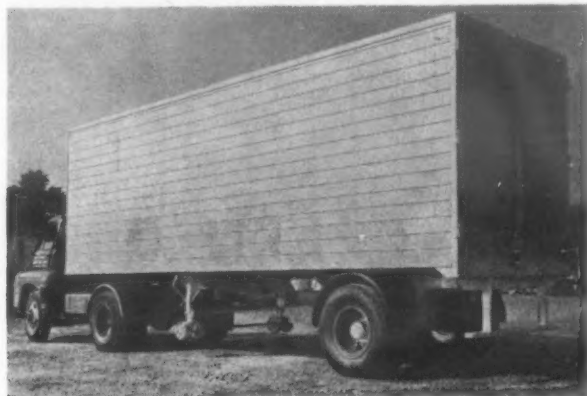
without any lining and presents an exterior that is less subject to superficial damage, while the interior pillar type is more suitable when insulation is required and perhaps better when appearance is a prime consideration.

The side frames are formed of an extruded alloy cant rail, incorporating a drip moulding and forming a roof quarter panel, an extruded alloy bottom rail and extruded alloy vertical pillars at 24-in. centres assembled by high-tensile aluminium rivets and a double row of Huck lock bolts securing the pillars to the bottom rail. Sides are panelled in .064-g. 65S Alclad aluminium sheets, secured either to the inside or the outside of the pillars by high-tensile aluminium rivets. The exterior panels are set longitudinally and have horizontal corrugations at 6-in. centres. The roof is of all-riveted construction with compressed seams while the front end has 5-in. radius corners of extruded alloy section and protective alloy castings at the top of the front corners. The floor is of 1-in. hardwood laid longitudinally on high-tensile pressed-steel crossmembers set at 12-in. centres.

Maximum Usable Space

A feature of the corner and cant rail extrusions is the squaring off of the interior faces so as to permit loading right into the corners and maximum usable space in given exterior dimensions. For the same reason, the roof has been given a camber of only $\frac{1}{4}$ in. and the pressed-steel rear door frame permits a virtually full interior width and height aperture. The rear doors themselves are provided with pressure

cam locks and dust- and leak-proof rubber seals. Weight saving is the principal advantage of the integral form of construction—assuming of course that van-bodied semi-trailers are to displace the commonly used open body and lift-off container when closed cartage is required. In fact, the York Trailer Company claims that its new vans have about the same weight as the average platform semi-trailers of equal weight capacity. Actual unladen weights of the Freightmaster range from 2 tons 14 cwt. for the 22-ft. 12-ton vehicle to 3 tons 16 cwt. for the 22-ft. 20-ton version; each foot of additional length adds 101 lb. of weight in



The single-axle 12-ton version can be fitted with S.A.E. or Scammell automatic coupling; this picture illustrates the interior-pillar corrugated-panel construction

application on this side of the Atlantic, are the greater protection now demanded for food and the growing volume of consumer goods in transit; new methods of packaging, which in the main have discarded stout timber cases in favour of cheap disposable cardboard; modern handling methods using pallets and stacker trucks, requiring high cubic capacity; and the increasing practice of haulage in sealed bonded vans over international boundaries.

Wide Range

Named Freightmaster, the new single- and two-axle semi-trailers employing standard York running gear, mounted on a sturdy subframe, and sealed screw landing gear. The payload range covered is from 12 to 20 tons in vans 22 ft. to 40 ft. long and either 7 ft. 6 in. or 8 ft. wide, with interior height of 6 ft. 9 in., 7 ft. 6 in. (standard) or 8 ft. 8 in. An S.A.E. kingpin coupling is standard, but the Scammell automatic coupling can be supplied with the smaller 12-ton vans, in which case the maximum length is restricted to 27 ft. and overall height is slightly increased.

Both single and double axles are of tubular section and employ standard York double-slipper semi-elliptic springs, while axle alignment is preserved by rubber-bushed radius rods. The 20-ton capacity tandem-axle trailer is available with Airpoise pneumatic suspension. Both 12- and 14-ton versions have single-line vacuum brake-actuation equipment while the heavier vehicles all have two-line air-pressure actuation. Brake gear itself is of the S-cam-operated type, providing up to 364 sq. in. of lining area per axle.

Construction

The general design of the vehicles is based on a frameless stressed-skin form of construction of high-strength materials and a particular feature is that all basic components used are interchangeable between one model and another and between the two basic forms illustrated—interior and exterior post construction. There is no difference in strength of the two forms; the exterior pillar type provides a smooth interior that can be used



The tandem-axle version is available in capacities of 17 or 20 tons and with exterior pillars as shown or interior-pillar construction as in the upper picture

all cases. All the trailers are designed for packing into conveniently sized lots for knocked-down shipment.

A new £50,000 technical training centre and laboratory at the Ayr works of the Scottish Stamping and Engineering Co., Limited, was opened on September 2 by Lord Forbes, Minister of State for Scotland. Specialising in the mass production of drop forgings for many of Britain's major industries, including the motor industry, Scottish Stamping, which is part of the Guest, Keen and Nettlefold Group, is the only major forge in Scotland and the second largest in the United Kingdom.

The New Face of Northern Ireland

(Continued from page 3)

form. Through its associated company, U.K.-European Transport, Limited (which is owned jointly with Anglo-Overseas Transport, Limited) a through service from Northern Ireland to the Continent is offered, using similar semi-trailers.

B.R.S. Operations

From its up-to-date Irish Ferry branch at Preston Dock, (MODERN TRANSPORT, March 1, 1958), British Road Services continues to operate extensively on the Preston-Larne route, employing some 275 semi-trailers, 60 containers and 90 Lancashire flats. Traffic is also carried on the Larne-Ardrossan route but here, though traffic operation is in the hands of Preston, the tractors are supplied by a Glasgow branch of B.R.S. Traffic is carried primarily to or from the London, Birmingham and Leicester areas, and containers are retained at strategic points so that they may be loaded to Preston without delay, using rigid vehicles if necessary. Transhipment to a semi-trailer is then effected at the Preston branch, using a 15-ton Butters derrick.

In Northern Ireland

Haulage of semi-trailers or containers to and from points in Northern Ireland devolves almost

entirely upon the Ulster Transport Authority by virtue of its statutory monopoly outside the boundaries of Belfast and Londonderry. The U.T.A. is currently operating some 850 goods vehicles and over 500 trailers and it is estimated that some 150-170 motive units are engaged in connection with the ferry services, including quay movements. Since 1949 the number of trailers, containers and flats hauled by the U.T.A. has leapt from insignificance to nearly 35,000 units. Incidentally, the Authority is always prepared to supply vehicles to traders on a contract hire basis and has about 70 already so operating.

British Railways has participated actively in the expansion of trade to and from Northern Ireland, being the first in fact to provide large-capacity containers for the Irish trade. In addition to containers for general traffic, insulated units and bulk liquid tanks are supplied. The number of containers carried on the Heysham-Belfast route has gone up from 3,700 in 1949 to 26,700 last year. Heysham North Quay and South Quay have been re-equipped for this traffic and, as already noted, improvements are under way also in Belfast. There are sailings six times weekly in each direction, free of tidal restrictions, for container traffic, apart from other cargo services.

New concept of bulk handling

Bennes Marrel units
for planned operations



A multi-bucket unit supplied to Brymbo Steel Works Ltd

Bennes Marrel units revolutionise bulk handling with their system of multi-buckets used in conjunction with a truck that features built-in hydraulic lifting gear. Amazing economies of time and labour are being effected in the handling of a wide variety of bulk materials. Now being operated by **Steel Companies, Chemical Companies, Oil Refineries, Contractors, Scrap Merchants, Machinery Manufacturers, and Refuse Collectors.**

Bennes Marrel Multi-Buckets Standard Unit. A standard truck chassis is adapted to incorporate hydraulic lifting gear. It can then load and unload itself with detachable buckets, and transport them between loading and unloading points. By operating with the optimum number of buckets, maximum efficiency with complete elimination of time-wasting can be achieved. All the loading and unloading operations are controlled by the truck driver from his cab.

Bennes Marrel Multi-Crane Unit. This model incorporates all the features of the Standard Unit plus the advantages of a mobile crane. A third arm actuates the cable of a lifting boom. The forward/backward motion of the arms combined with the raising/lowering of the boom permits perfect precision in placing the load in exact position. This unit performs the duties of a tipper truck and mobile crane.

Bennes Marrel Elevated-Buckets Unit. Longer lifting arms enable this unit to elevate the loaded Multi-Buckets to 15 ft. off ground and tip at 45° and unload the contents direct into railway trucks or road transport trucks from their elevated position.



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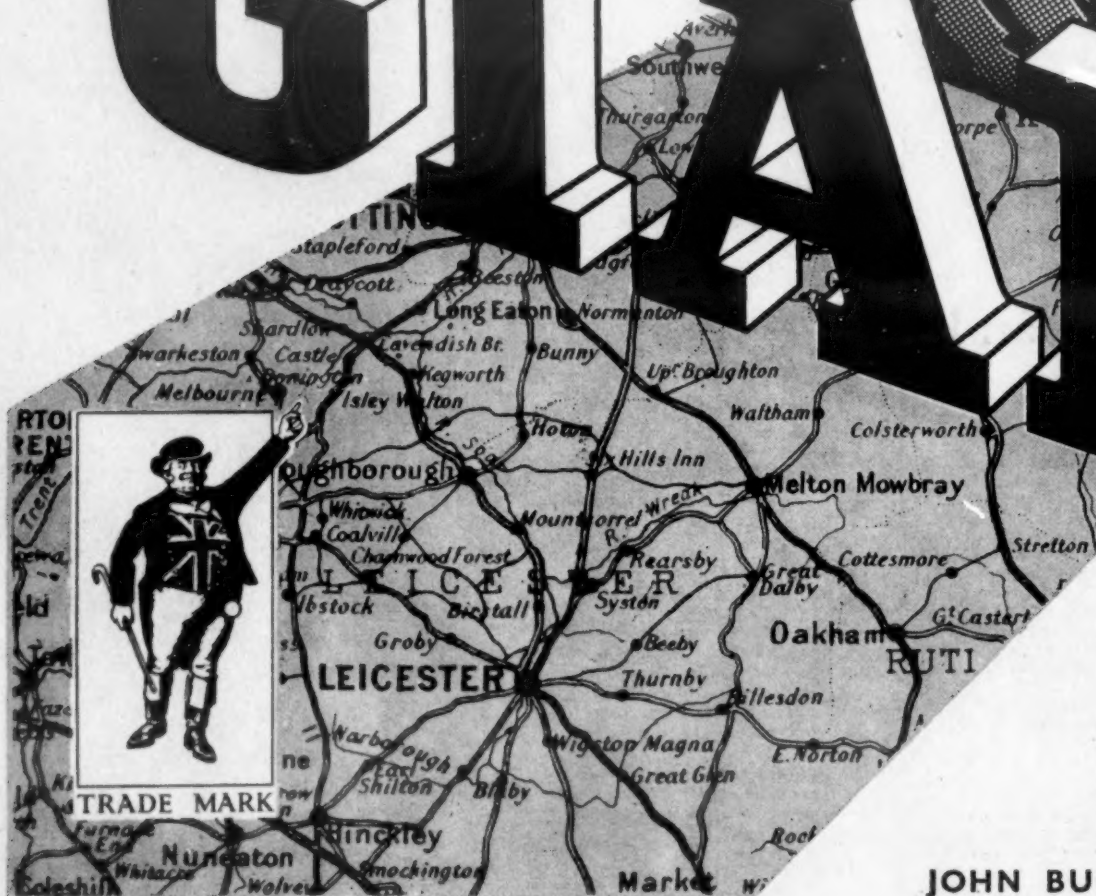


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CHISWICK FLYOVER

Opened on September 30

TECHNICAL DESCRIPTION OF WORK

OFFICIALLY opened on September 30, the Chiswick flyover is the first major two-level highway scheme completed in the London area since the 1939-45 war. The works extend for about half a mile, and include the construction of a through road linking London's new western approach, the Cromwell Road Extension, to the Great West Road without interference from cross-traffic. This through road is over a new roundabout 400 ft. in diameter, with a 40-ft. wide carriageway, at the junction of the North Circular Road, Chiswick High Road, the road to Kew Bridge and the Great West Road. Traffic will be distributed to these roads by means of four slip roads joining the roundabout at ground level.

The present junction, now used by 40,000 vehicles a day, is seriously congested at times and the scheme thus relieves a bottleneck at the western end of the Cromwell Road Extension. The through road of the flyover has four-lane traffic, with dual 24-ft. wide carriageways separated by a central island. Each slip road is 24 ft. wide, with two traffic lanes. The gradient of each slip road east of the roundabout is about 1 in 20, and that of the through road west of the roundabout about 1 in 29. Other gradients do not exceed 1 in 40.

Special Problems

The flyover, for which the main contractor is Alderton Construction Co., Limited, of Old Queen Street, S.W.1, has been constructed through a densely built-up area but the demolition of buildings has been kept to a minimum consistent with engineering requirements. The scheme has also involved the diversion of many miles of underground services in the shape of G.P.O. cables, gas mains, sewers, etc.

The construction programme was governed to a major degree by the need to avoid impeding the

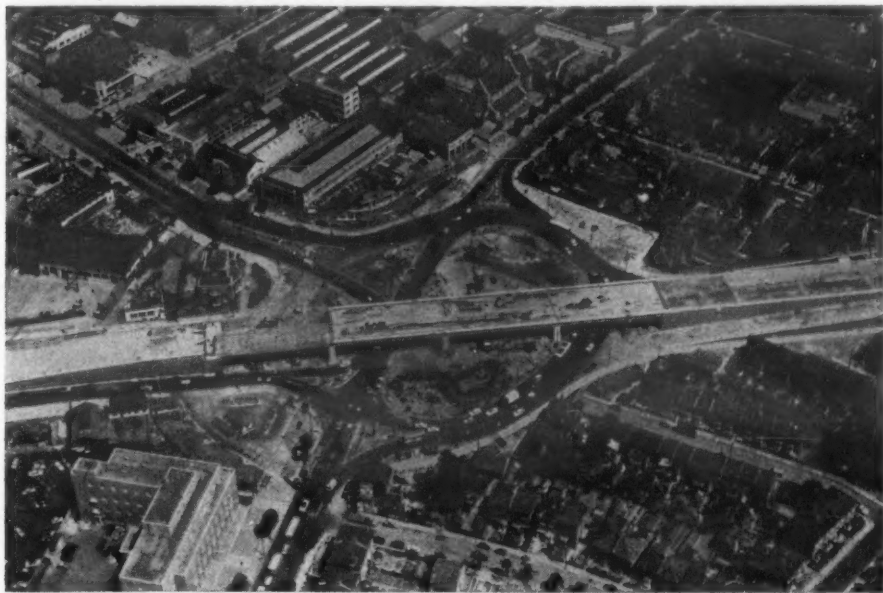
The abutments and the two easterly piers of the main bridge are supported on reinforced concrete rafts founded on a stratum of compact gravel overlying the London clay. The western pier is carried on a narrow piled foundation owing to the proximity of an existing 48-in. diameter sewer at a depth of 20 ft. below ground level. The piles, 10 in number, each 1 metre diameter and carrying a maximum load of 370 tons, are of the bored cast in situ type constructed to a depth of 80 ft. below ground level, 60 ft. of this depth being in the London clay. The top 25 ft. of each pile is reinforced.

Piling for Main Bridge

The piles are constructed with a mechanical planted pile borer which has a dual action, for it drives a steel casing with a rotary movement while a grab excavates the soil. The steel casing is extracted as the pile is concreted. The bridge abutments are of mass concrete, brick-faced and each pier consists of five massive concrete columns, lightly reinforced, and a heavily reinforced cap beam.

The superstructure of each span consists of 15 concrete beams placed side by side, each beam being precast in three sections. The end sections are about 38 ft. long and the centre sections 48 ft. long, each section weighing about 33 tons. The minimum 28 days cube strength of the concrete is 7,500 lb. per sq. in. The beam units, which are provided with mild steel secondary reinforcement and certain prestressing cables post-tensioned by the Freyssinet system during manufacture, are of inverted T section with a narrow top flange and with transverse diaphragms cast integral.

The beams were specified to be manufactured within fully clad buildings where the necessary quality control of the concrete could be ensured at



The Chiswick flyover under construction: Great West Road from left and Cromwell Road Extension to right of photograph

smooth flow of traffic. The work was therefore divided into planned stages. A temporary slip road on the south side of the works connecting the Cromwell Road Extension to Chiswick High Road with a temporary enlargement of the existing small roundabout were constructed first in order to provide additional capacity for increasing traffic flow resulting from completion of sections of the Cromwell Road Extension. Traffic was diverted from this temporary road to the completed northern slip roads and the northern arm of the new roundabout to enable construction on the south side and further bridge work to proceed.

Two Bridges

The flyover embodies two bridges. First is the main bridge, consisting of four freely supported square 125-ft. spans, with a width of 59 ft. between parapets, carrying the through road over the new roundabout. Secondly there is a bridge over Wellesley Road, east of the new roundabout. This has a 70-ft. single skew span; it is 124 ft. between parapets, as the slip roads meet the through route at this point and four 24-ft. carriageways are required.

The approaches of the flyover and the section between the bridges are formed on embankments retained between mass concrete walls, brick faced with in situ concrete copings forming guard verges about 4 ft. wide to the through road and slip road carriageways. The embankment filling consists of well-graded mechanically stable gravel (hoggin) containing between 5 per cent and 15 per cent by weight of material passing a No. 200 sieve. The filling has been spread in 9-in. layers and each layer compacted by nine passes of 8-ton smooth wheel rollers, a state of compaction corresponding to about 7½ per cent air voids. Against bridge abutments and retaining walls, compaction was by means of vibrating plate compactors and the required degree of consolidation behind bridge abutments corresponds to about 5 per cent air voids.

Carriageway and Kerbs

Carriageway construction consists generally of a reinforced concrete base slab 10 in. thick with a surfacing of ¾ in. of hot-rolled asphalt. Curing of the concrete is carried out by bituminous emulsion spray. Transverse joints are formed in the base slab at a maximum spacing of 120 ft. and a strip of light steel fabric is laid flat on the base slab at the joints before surfacing, as a precaution against possible cracking of the asphalt.

The parapet railing consists of tubular steel standards and rails connected by a mechanical joint. The small expansion gaps between rails and standards are fitted with neoprene expanded rubber washers. Road kerbing is of grey granite; lighting columns are reinforced concrete of octagonal sections. All structures of the flyover have been designed to comply with Ministry of Transport standard highway loading and for the 180-ton abnormal live load in accordance with British Standard 153, Part 3A, 1954, Section A.

all times of the year; it was considered impracticable to cast the beams at the site owing to the congested conditions. The sections were manufactured in a factory some 60 miles away and transported daily to the site where they were lifted by means of a 45-ton Lima crane and erected directly on the permanent bearings on piers and abutments and on temporary rollers supported on steel trestles on either side of the transverse joints between the sections. These joints are nominally 3 in. wide, and continuity of the ducts across the joints is maintained by means of short lengths of rubber tube clipped to the ends of steel tubes projecting from the beams. The joints are filled with rapid hardening cement concrete. Each complete beam after assembly is post-tensioned by the Freyssinet system when the concrete in the joints has attained a cube crushing strength of at least 6,000 lb. per sq. in.—usually three days after casting. Each duct contains a cable of 12 high-tensile wires 0.276 in. diameter, and the Freyssinet anchorages are located on the outside of the steel and plates. Each beam is stressed from one end with a load of 113,000 lb. per cable, and the ducts are pressure-grouted with neat cement colloidal grout.

The narrow longitudinal joints between the bottom flanges of the beams are filled with concrete. The joints between the transverse diaphragms are also filled after the ¾-in. diameter preformed ducts through the diaphragms have been made continuous at the joints by means of inflatable rubber tubing. An in situ reinforced concrete slab was cast at the level of the top of the beams, and the deck was prestressed transversely by the Gifford-Udal system with cables threaded through the webs and transverse diaphragms of the beams. The anchorages are located in the inner webs of the outer U beams.

Load Test

A loading test to failure of one complete roadway beam was made to verify assumptions made in the design, both in the elastic and ultimate conditions, and to provide information for research on prestressed concrete. The test rig was designed to be capable of applying symmetrical loads of 125 tons at two points 30 ft. apart. The beam failed when the applied loads reached the value of 118 tons on each jack, in close agreement with the estimated failing load. The actual failing load represents a load factor of three on the combined dead and live loading in the design.

Fixed and rocker bearings are provided alternately on abutments and piers. The bearing plates and rockers are made of Meehanite CB metal, a high-tensile corrosion-resisting cast iron. The locating pins are of stainless steel. Expansion joints in the carriageways and verges above the "free end" bearings consist of stainless steel sliding plates.

The Wellesley Road bridge was constructed in two halves, separated by a longitudinal joint. The completed deck consists of 43 precast prestressed beams of inverted T-section post-tensioned during manufacture by the Freyssinet system. The beams

(Continued on page 14)

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NEWS FROM ALL QUARTERS

New Manchester Station Name

When the reconstruction of Manchester London Road Station is completed in 1962, it is proposed to rename the new station Manchester Piccadilly. London Road Station was built by the Manchester and Birmingham Railway and opened in 1842. The present station buildings which are being demolished, were opened in 1866. The new name has received the approval of the town planning committee of Manchester City Council.

Drivers Choose a Courtesy Campaign

Some 22,000 drivers of heavy goods vehicles in Switzerland recently decided to make a special contribution to the fight against the ever-increasing rate of road accidents. These "knights of the highways" undertake to keep always to the extreme right, stop at a safe distance from closed railway barriers and to control exhaust gases. As a distinctive emblem, the truck drivers have chosen a white star which they attach to their vehicles.

Computer Stars in Film

International Computers and Tabulators, Limited, in collaboration with the South Western Gas Board, has produced a film which shows an electronic computer in action. The 20-min. film, in colour, gives a vivid account of the rationalisation of the gas industry which has taken place in the South Western counties. The complete accounting procedure for the production of bills is shown, with briefer descriptions of payroll preparation and other more specialised applications.

Redundancy Clearing-House Scheme

The railway shopmen's sub-committee of the Confederation of Shipbuilding and Engineering Unions decided on September 16 to accept the clearing-house system proposed by the British Transport Commission to deal with redundancies among railway workshop staff resulting from the modernisation of British Railways. Under the scheme a recruiting officer would be in charge of a central bureau which would keep a record of all vacancies in the various regions of British Railways. British Railways has also agreed to pay, temporarily, an allowance of 52s. 6d. a week to men called upon to work away from home.

New Holland—Hull Lighter Service

Objection in principle to the proposal of the British Transport Commission to close the Hull to New Holland lighter service was registered by Brigg Rural Council on September 24. The clerk, Mr. M. W. Bailey, said the proposal was the final blow to the decaying village of New Holland. He said the community had been developed around the railway. The service is 111 years old, but the Commission says that the 18 dumb lighters are now handling 15,000 tons less than a year ago. The service has lost money for some years and the transference of goods to an alternative route via Stainforth would effect an annual saving of £39,000. It is said that an expenditure of £80,000 would be needed to bring the equipment up to date.

Eurofima Loan

Eurofima—the company set up in Basle to finance European railway equipment—is seeking to raise 40 million francs by the issue of a new loan in Switzerland. The proceeds will be used to finance a part of new orders totalling some 70 million francs for 115 diesel locomotives, three electric trains and 125 freight wagons.

Draycott Bridge Replacement

Road traffic is being diverted for about three months as a result of the demolition on September 27 of the old Draycott bridge at Borrowash which carried the Borrowash—Long Eaton road over the Derbyshire—Nottingham railway line. A new £60,000 road bridge is being built in place of the old structure put up 120 years ago, and which was a notorious traffic bottleneck.

Tilbury—Gravesend Vehicle Ferry Service

An improved winter service will be provided on the Tilbury—Gravesend car ferry from October 1. Instead of reverting to the previous winter service interval of 30 min., the 20 min. service in the peak hours between 7.5 a.m. and 10.5 a.m. and between 4.5 p.m. and 6.5 p.m. will continue, as at present. During the off-peak periods there will be a 30 min. service until 8.5 p.m., thereafter departures at approximately 40 min. intervals.

Forth and Clyde Junction Railway

The Branch Line Society is running a special last train on the Balloch—Drymen portion of the Forth and Clyde Junction Railway on October 17. The train will consist of three coaches and it is hoped that the locomotive will be an ex North British Railway 0-6-0. The Forth and Clyde Junction Railway was opened in 1852 from Balloch to Stirling, and remained an independent railway though leased by the N.B.R. from 1871 until the formation of the L.N.E.R. in 1923. Passenger services except for the Aberfoyle trains were withdrawn in 1934. The Aberfoyle trains came off on October 1, 1951, and now the goods service is to be withdrawn from the whole area and replaced by lorry service.

Financing of Off-Street Parking

In a statement of policy circulated by the Standing Joint Committee of the R.A.C., A.A., and R.S.A.C. to all election candidates it is suggested that no more parking restrictions should be imposed without prior provision of off-street parking accommodation on a realistic scale. It is now known that the receipts from parking meters will make only a marginal contribution towards the heavy capital cost of providing garages in the central areas of large towns and cities. If any substantial progress is to be made with the parking problem, funds must clearly be made available from other sources. The organisations say that they have repeatedly urged that grants should be made to local authorities from central funds for the provision of parking accommodation.

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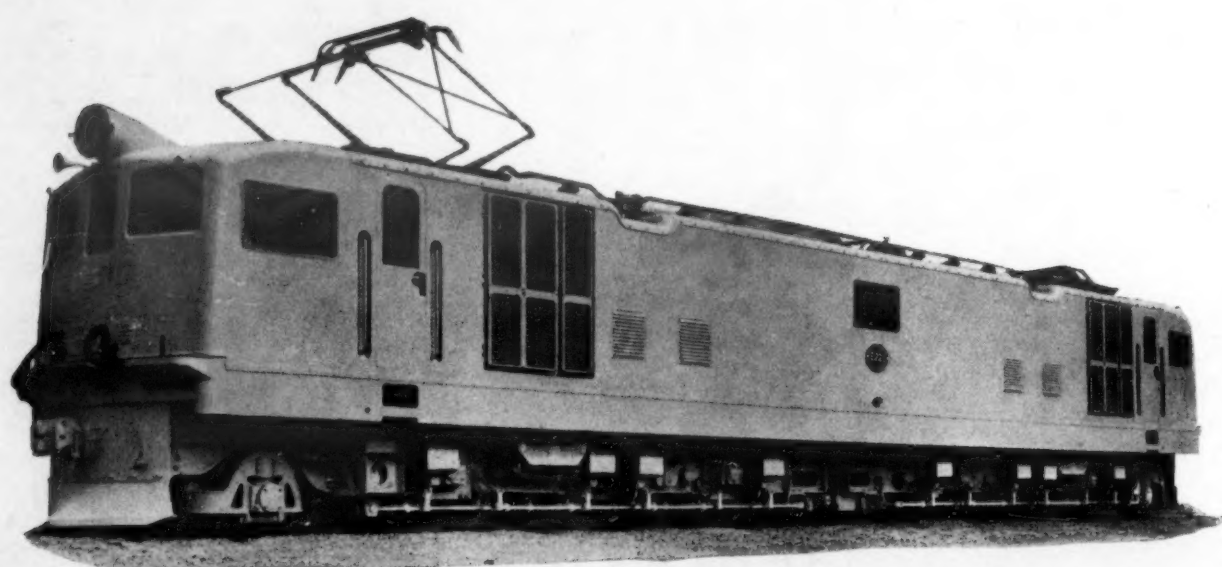
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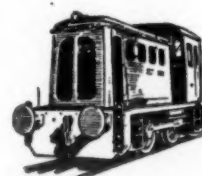
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COMMERCIAL AVIATION

Another Dart Herald Tour

T.W.A. MILEAGE RECORD

TWO of its new Dart Herald jet-prop air liners are being sent by Handley Page to Australasia and the Far East. Between them the two aircraft are due to cover 60,000 miles. Demonstrations will be given in 11 countries: New Zealand, Australia, New Guinea, Borneo, the Philippines, the Federation of Malaya, Singapore, Indonesia, Vietnam, Thailand and Burma. This will bring the total of lands visited by the Herald to 40 since April of this year. The Heralds are now flying at a new approved all-up weight of 39,000 lb. This increases payloads by 25 per cent and lowers operating costs to 8.85d. a short ton statute-mile and 1.07d. a passenger-mile. The aircraft are fitted with the latest type of Rolls-Royce Dart, the R.Da.7-527. Both aircraft are expected to be present at the opening on October 24 of Rongotai-Wellington's new airport. G-APWA, the first production Herald, will be ready only just in time to fly to New Zealand as fast as possible for the event. To insure against any last-minute hold-up on the way, G-AODF, veteran of 50,000-mile tours of Asia, the Middle East and South America, will fly out ahead of its sister craft. After the celebrations at Rongotai, G-AODF will return to Britain and G-APWA will then begin an extensive tour during which it will be seen in Christchurch, Canberra, Melbourne, Sydney, Port Moresby, Lae, Manila, Jesselton, Singapore, Kuala Lumpur, Djakarta, Saigon, Bangkok and Rangoon. Its itinerary involves long sea-crossings, including the 1,200-mile passage of the Tasman Sea.

B.E.A. Traffic Through Southampton

In 1947 B.E.A. flew 18,336 passengers between Southampton and Jersey. By 1951 the figure had risen to 26,725. Last year passengers totalled just under 52,000. This year's total is expected to be a record, since in August alone about 800 more people were carried than in August, 1958.

P.A.A. 321s on London-New York Run

Pan American World Airways will commence nonstop transatlantic jet flights on October 10 with the introduction of the Boeing 707-321 between London and New York. It will phase the larger jets into operation as they are delivered and by December will maintain a twice-daily jet service between London and New York with the 321s.

Jersey-Cherbourg Ferry Service

On October 5 Silver City Airways is introducing a new service which has been timed to start at the close of the Channel Islands holiday season so as to provide Jersey hoteliers and others engaged in the tourist industry with an air ferry link to fly their cars direct to Cherbourg and, via connecting flights, to the English mainland. Initially, the service will operate three days a week—Monday, Wednesday and Friday—and the Jersey-Cherbourg flight time will be 20 min. The airline has also announced a reduction in its rates. These took effect on October 1 and will remain in force until May 31. The cuts range from 10s. to £10 10s. and the single fare for a car of less than 11 ft. overall length is now £3 to Le Touquet or Calais, £4 to Ostend, and £4 10s. from Hurn to Cherbourg. In terms of percentages the reductions vary from 6 to 60.

July Traffic by British Airlines

It is provisionally estimated from statistical returns received to date that United Kingdom airlines traffic on scheduled and inclusive tour services in July amounted to 45.7 million short ton-miles. This represents an increase of 16 per cent compared with July last year. Capacity operated increased by 12 per cent to 70.2 million capacity ton-miles and the overall load factor rose from 63 to 65 per cent. In the first seven months of 1959 traffic amounted to 218 million short ton-miles compared with 189 million in 1958 and 179 million in 1957.

Replacements for N.A.C. DC3s

The New Zealand National Airways Corporation would make a final appraisal soon after the Wellington Airport pageant on October 24 of the type of aircraft it required for replacement of the existing DC3 fleet, and a final decision on the purchase of an initial four machines would be made before the end of the year, it was stated by the Minister in charge of Civil Aviation, Mr. John Mathison, in the New Zealand House of Representatives recently. Two Handley Page Heralds would be flown from the United Kingdom, and a Fokker Friendship would be flown from Australia.

T.W.A. Claims Record Mileage

Trans World Airlines flew 3,814 million revenue passenger-miles during the first eight months of 1959, more than any other airline in the world, it was announced in London recently. In addition T.W.A. broke its own monthly record for U.S. domestic operations by flying 841,417,000 revenue passenger-miles within the United States. This represented a 21 per cent increase over August, 1958. T.W.A.'s combined domestic and international operations for the month produced a total of 615 million revenue passenger-miles, giving a lead over all other world airlines and surpassing, by 22 per cent, T.W.A.'s total passenger-miles in August, 1958.

Revised I.A.T.A. Airport Book

To meet the current need of airport planners for guidance on the provision and layout of terminal buildings, aprons and facilities, the International Air Transport Association has published a revised edition of *Airport Buildings and Aprons*. This 179-page reference book combines the basic information contained in the first edition published in 1956 with that of last year's *Apron Requirements for Turbine-Powered Aircraft*, as well as new material gathered as a result of the airlines' recent operating experience with jet and turboprop aircraft. Since the handbook is one of consolidated opinion, special circumstances encountered at individual locations may make some of its comments inapplicable. The I.A.T.A. document therefore stresses the importance of ensuring early and continuous consultation on the spot between authorities responsible for planning individual airports and airlines who will be using their facilities. The document's material is designed to be used for such consultation. Copies of the new book are available to the general public for two dollars (U.S.) each, on order to the I.A.T.A. Technical Secretariat, Terminal Centre Building, 1060 University Street, Montreal 3, P.Q., Canada.

B.R.S. MANAGEMENT BOARD



Harold Elliott

Mr. HAROLD W. ELLIOTT, M.Inst.T.

• • • • •

From October 1 Mr. Harold William Elliott has been a member of the Board of Management of British Road Services. Born in 1905, he was educated at Brighton College and began his transport career as an apprentice with the Swiss commercial vehicle manufacturers, Adolf Saurer, in Arbon, Switzerland. He joined Pickfords, Limited, in 1926, and subsequently held managerial appointments in various departments until 1938, when he became commercial assistant to the general manager. A year later Mr. Elliott was appointed a member of the Transport Advisory Committee, Food Defence Plans Department of the Board of Trade. He became an Adviser on Road Transport Costings, Ministry of Transport, in 1940, and, later in the same year, was appointed Controller of Road Transport, Ministry of Supply, a post which he held until 1943 when he went to Egypt as Director of Transport, Middle East Supply Centre, Cairo. On his return to civil life Mr. Elliott was appointed in 1945 assistant general manager, Hay's Wharf Cartage Co., Limited. He also became a national member of the Road Haulage Central Wages Board, and a vice-chairman of Meat Transport Organisation, Limited. Two years later he became general manager of Hay's Wharf Cartage and held this post until the Road Transport Executive was formed in 1948, when he was appointed chief officer (freight). A year later his appointment was re-designated chief traffic officer and, following further reorganisation, Mr. Elliott became in September, 1956, chief traffic manager, British Road Services, the post which he is now to retain in addition to his appointment as a member of the B.R.S. Board of Management. Mr. Elliott is a member of the Coastal Shipping Advisory Committee, a Freeman of the City of London, and a Liveryman of the Carmen's Company. He is a governor of Brighton College, his former school, and is a director of United Carriers, Limited, B.R.S. (Pickfords), Limited, B.R.S. (Contracts), Limited, and B.R.S. (Meat Haulage), Limited. He is a member of the Institute of Transport and a past member of the council of that body.

ULSTER TRANSPORT

Straight Talking

CHAIRMAN TELLS PUBLIC

THE booklet published by the Ulster Transport Authority on its relations with the public (subject of editorial reference on page 2) devotes considerable attention to the allegation that the U.T.A. is indifferent to the wishes of the public. It is driven home that the duties and obligations of the Authority are defined in the Acts of 1948 and 1958, and the Authority is bound to carry them out so far as lies in its power to do so, even at the risk of possible public criticism and controversy arising out of some of its decisions for achieving that end.

It is true that in certain circumstances the individual wishes of some members, or sections, of the public may not have been complied with, but this has not been due to any desire to disregard such wishes, or to act in a dictatorial manner, or to a policy of indifference on the part of the Authority but, invariably, to some other cause which has outweighed all other considerations. It is scarcely valid criticism, for instance, to say that because the Authority has not been in a position to comply with the wishes, frequently urged, of certain sections of the public and of traders for lower rates and fares, it has in consequence disregarded such wishes, or acted dictatorially or indifferently. In this connection, the Authority is under constant pressure from the public to reduce rates and fares and from Parliament to levy such charges as to bring in revenue adequate to requirements, opposing demands which cannot readily be reconciled.

Co-ordination

The road and rail services of the U.T.A. are so arranged as to afford a co-ordinated service to the public, but it should be appreciated that in many instances a compromise between the relative advantages of a rail or road service must be accepted, even if, in certain circumstances, neither is the best possible, viewed in isolation. When it becomes inevitable that the choice of either a rail or road service be made, the latter must prevail, as road services come nearer than rail services to meeting the requirements of the majority for a reasonable transport service. Rail services which follow a fixed route, with stations more or less widely apart, cannot of themselves meet all the public need.

In an area like Northern Ireland there is, unfortunately, in many districts an insufficiency of traffic to enable rail as well as road activities to function economically, and in such conditions the cost of providing road services is less, and often much less, than that of rail services. Even in areas where traffic in fairly substantial volume is passing, there is rarely enough of it to support both forms of transport, but where there is the cost margin in favour of road services is perhaps less marked. From its inception, the Authority has found that, year by year, the overall loss which it has incurred has arisen almost wholly from the operation of its rail services, while the experience of the Great Northern Railway in the same period has been one of mounting losses each year in operating rail services. The circumstances and the conditions which have resulted in the relatively satisfactory results of working the Belfast-Bangor rail services are quite exceptional.

Withdrawals

When the U.T.A. curtails or withdraws a service, whether by rail or road, some disappointment and dissatisfaction is almost inevitable on the part of the public thereby affected. While this is regretted, it is unfortunately unavoidable, if the duty laid upon the Authority is to be complied with. Such action, however, should not be regarded as having been taken expressly for the purpose of bringing about disappointment and dissatisfaction; if that result follows it is because of hard economics.

The extent to which the railways of the Authority, taken as a whole, involve losses in working has already been indicated. It must be accepted that, with the various alternatives to rail which are now available to the public, both for passengers and for freight, and their relative convenience, and possibly cheaper cost in many cases, the rail services are now in less demand.

Losses

The operating losses on railways of the Authority are running at about £350,000 per annum, or £7,000 per week, and clearly, an increase in traffic equivalent to that amount in passenger and freight carryings would not greatly increase the cost of working the railways. There is a limit to the amount by which the cost of working the railways, while still maintaining them roughly to their present extent, could be reduced, and this has almost been reached, so that, if the financial position is to be improved, without recourse to large-scale closure of lines, there is but one way open, and that is to ensure substantially increased business. It lies solely with the public to take action to enable the railways to be maintained, if they desire that to be done.

The closing some time ago of four halts on the Belfast-Bangor line created, and continues to create, an unfortunate amount of controversy and dissatisfaction, largely because of failure to appreciate the true position.

Consultation

The U.T.A., before closing these halts, informed the local authorities concerned, and was represented at meetings convened by some of them, in order to explain fully the circumstances and why it had been decided to do what was proposed. Later, the chairman of the Authority met a representative committee of the users of the halts, and at considerable length elaborated the circumstances and the reasons for the decision, but as the members of the committee, even then, were not satisfied, it was suggested by the chairman that the matter could and should be tested by a reference to the Transport Tribunal, and that the Authority would give the committee every facility for doing so. Nothing, however, appears to have been done in that respect, but a number of those who were affected by the closing of the halts, as well as others not directly concerned, appear to have made capital out of the incident and have used it to foster the impression that the U.T.A. has no regard whatever for the wishes of those who use its services. The Authority does not claim infallibility in this, or in any other respect, and the legislation under which it functions does not permit the Authority the undisputed right, or the last word, in matters of this kind. The Transport Tribunal, an independent body, was set up expressly for dealing with such a situation.

COLCHESTER STATION RECONSTRUCTION

Eastern Region Project

FOR GREAT EASTERN ELECTRIFICATION

AS an integral part of the electrification of the line between Chelmsford and Colchester, due to be completed in 1962, the Eastern Region of British Railways is to carry out extensive alterations to the station buildings and running lines at Colchester, completing for today's requirements a scheme inaugurated before the war. Some 52 miles from Liverpool Street on the Great Eastern Line, Colchester is one of the principal towns in Essex and, with an increasing population in the area, many more people are expected to use the fast and frequent service of through electric trains to Chelmsford and London for both business and recreational travel. The new layout of the station has, therefore, been planned to deal with passengers with speed, comfort and efficiency.

Buildings and Platforms

In the reconstructed station, the principal buildings will be on the up platform. The shell of the existing buildings on this platform will be retained, but considerable internal alterations will be made. There will be a large booking hall and ticket office, refreshment room, inquiry office,

bookstall, public waiting-rooms and lavatories, a parcels depot, telegraph office and office and amenity accommodation for the station staff. Single-storey extensions will be built at the east and west ends and on the platform face of the existing buildings. The extensions will be built in brick with timber windows and doors and central heating will be provided. A small canopy will be provided along the north elevation to connect with the main platform awnings. The present south elevation will remain practically unaltered.

Waiting-Rooms

The waiting-rooms will be equipped with furniture specially designed for the Eastern Region. The refreshment room will have cafeteria service and a bar and will be fitted with bar stools, fixed tables and seating. The face of the bar will be treated with a decorative panel in photo-laminate plastics. Ticket issuing facilities will be concentrated in one modern mechanised ticket office equipped with standard steel office furniture. The up platform will be lengthened to accommodate two 12-car trains, with the facilities for one train

to overtake another standing at the platform. The present down platform will be converted to an island platform and extended to take 12-car trains. All the buildings on this platform will be completely new and will include public waiting-rooms and lavatories, a small refreshment room and various offices for railway staff. The bay platforms at each end of the up platform will be retained for starting and terminating services. Platforms will be joined by an existing subway which will be extended to the north side of the station where a separate entrance for ticket holders will be provided. Electric lighting will be installed throughout. Adjoining the entrance on the north side will be accommodation for public and staff bicycles and motor-cycles. Parking space for 300 cars will be available—the majority in a new car park to be constructed on the down side. This will augment the existing parking space on the up side, which will remain.

Permanent Way Work

The main features of the track work to be carried out are the realignment of the main lines (now on a curve) through the station to provide for a maximum speed of 90 m.p.h., the provision of two additional tracks and platform faces and the construction of a single track burrowing junction for the down Clacton line. The extension of electrification from Chelmsford to Colchester will make possible an augmented train service and this will avoid conflicting train movements across the up main. The additional track through the station will necessitate a new span being added to the existing underbridge over the public road to the east of the station. A new skew span bridge under the Ipswich main lines will also be constructed.

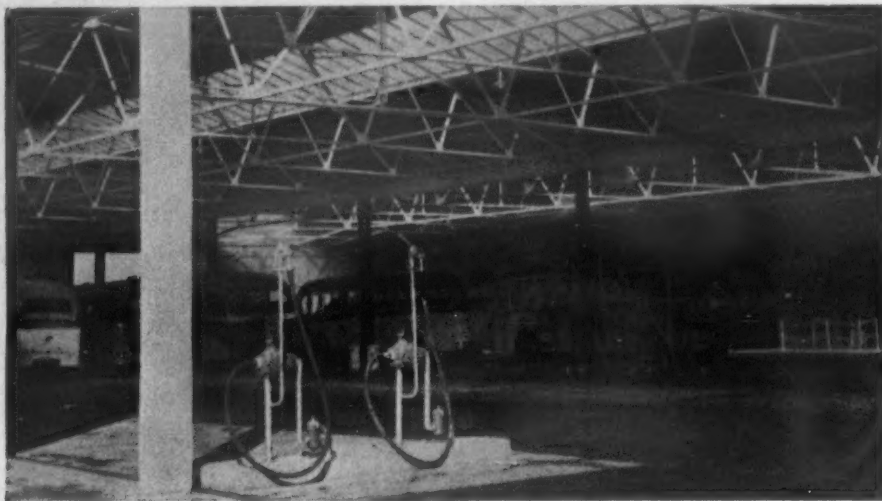
Other works in the vicinity of Colchester Station will include:—

- A depot for the maintenance of overhead line equipment.
- Stabling and cleaning sidings for electric multiple-unit and locomotive-hauled rolling stock, with a carriage washing plant.
- The demolition of the existing steam motive power depot and the provision of facilities for the servicing of diesel locomotives and diesel multiple-unit trains.

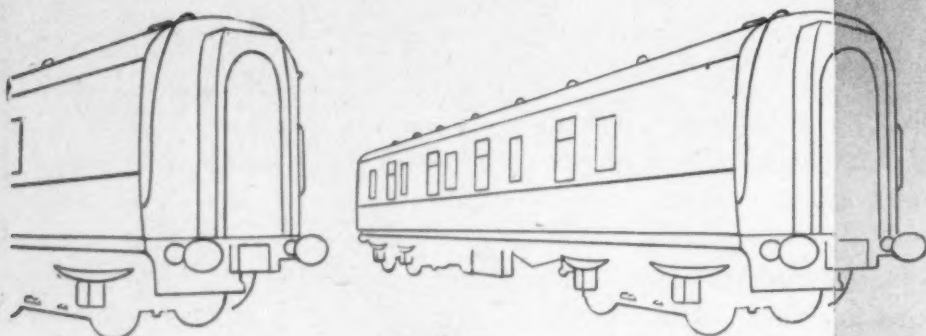
Signalling

Associated with the electrification of the lines, continuous track circuiting and colour-light signalling will be installed between Chelmsford and Colchester. New signalboxes will be constructed at Witham and Colchester and route relay interlocking installations will be provided at both places. The existing signalbox at Marks Tey will remain but all signal and points controls will be modernised. A new relay room will be built for the new equipment. Automatic signal sections are to be provided between Chelmsford and Witham; Witham and Marks Tey; and Marks Tey and Colchester. All telecommunication circuits will be cabled and train describer equipment will be provided between Shenfield and Colchester.

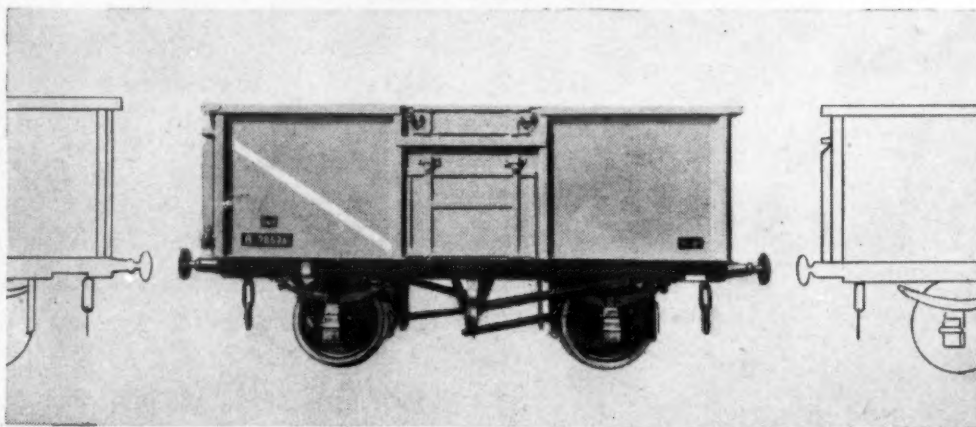
Some work has already begun on the station buildings and this part of the scheme is expected to be completed by the autumn of 1960. The work will be carefully staged throughout in conjunction with the completion of the track and other engineering items. Temporary facilities for passengers will be available during the whole period of reconstruction. The civil engineering work will be carried out under the general direction of Mr. A. K. Terris, B.Sc., M.I.C.E., chief civil engineer, Eastern Region.



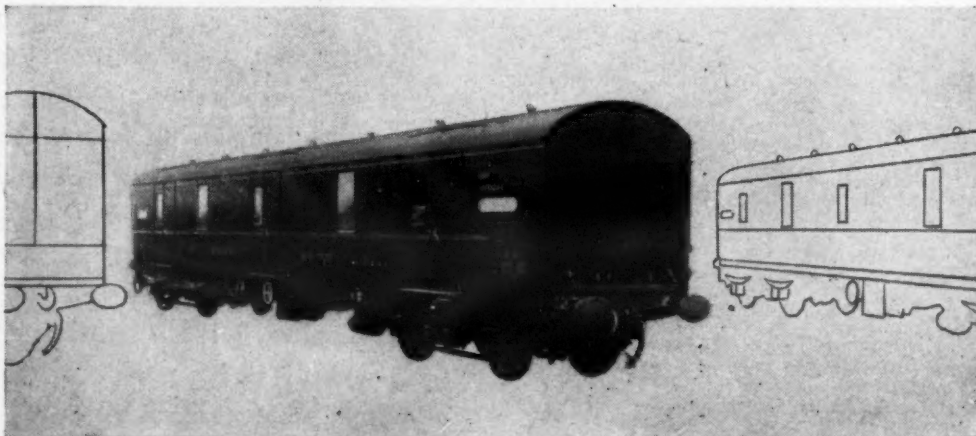
As recorded in our issue of September 19, W. Alexander and Sons, Limited, recently opened a new garage at Bannockburn and the view on the left shows some of the new bays. The group on the right, taken on the occasion of the official opening comprises from the left: Seated—Messrs. T. Craig (Transport and General Workers' Union), W. Sword (general manager, Western S.M.T. Co., Limited), J. P. Young (divisional manager, British Road Services), Sir Ian Bolton (then chairman, Scottish Area Board, B.T.C.), Mr. James Amos (chairman, Scottish Omnibuses, Limited), Sir Reginald Wilson (member, British Transport Commission), Mr. W. Alexander (general manager, W. Alexander and Sons, Limited); standing, Messrs. H. Joy (general manager, W. Alexander and Co. (Coachbuilders), Ltd.), P. G. Armstrong (assistant general manager, W. Alexander and Sons, Limited), W. R. Alexander, H. Jacobsen (Kelvin Construction Co., Limited), R. B. Dick, Junr. (general manager, Central S.M.T. Co., Limited), Deputy Chief Constable A. Rogerson (Stirling), Councillor J. Vallance, Mr. R. MacKenzie (general manager, Scottish Omnibuses, Limited), Councillor McLean, Mr. J. G. Methven (staff and welfare officer, Scottish Bus Group), Councillor D. Pearson and Councillor J. Docherty.



British Railways 58-foot Gangwayed Standard Brakevan.



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British Railways 57-foot Utility Van.

A wagon every 12½ minutes

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The figures prove that Pressed Steel have tremendous productivity—and a rich store of engineering experience. But they tell only part of the story. For they do not show the progressive approach of our design staff, the quality of engineering that goes into each job, and our record for prompt delivery. Nor do they show how constant, intensive research has made Pressed Steel ready to play an active part in the future development of the world's carriages and wagons.

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L.T.E. UPMINSTER DEPOT

District Line Improvement (Cont.)*

THE preliminary stage, described in the first part of this article on the new London Transport depot for District Line trains at Upminster, was followed by Stage I. That started with the removal of the old sidings and then excavation and drainage for the second new fan of six double-length sidings and the western ends of the other two reception roads.

During this stage, work was begun on the excavation and concreting of the car shed inspection pits, which are of mass concrete. Towards the end of the stage, tracks were laid in the second siding fan and the eastern end of the first reception road was laid over the completed portion of the subway and the washing plant base, ending in a temporary connection to the old reception track. The existence of this temporary connection made it possible to bring the second fan of sidings into use, the first fan then being handed over to the permanent way department for fettling.

Large-Scale Filling Operations

In Stage II, the eastern end of the old reception road was removed, the embankment was widened and the second half of the subway completed, and the second and third reception roads were laid between the station and the depot. Also in this stage, large-scale filling operations in front of the car shed were completed, followed by the laying of the car shed approach tracks leading to the inspection pits, which by then were ready to have the rails installed. At Upminster Station, platforms Nos. 3 and 4 were shortened. A scissors crossover was laid in between two of the reception roads.

In Stage III traffic was diverted to the second and third reception roads while work on the western end of the first reception road (which had had the temporary connection) was completed and the superstructure of the first train washing plant was built. At this point, the depot buildings and service road had also been completed and the depot was brought into use on December 1, 1958, for the trains previously dealt with at East Ham. There remained the erection of the second washing plant and the installation of overhead lifting gear and machine shop equipment in the lifting shop, all of which has now been completed.

Main Buildings

The car examination shed, 450 ft. in length, consists of nine roads, eight of full length capable of taking an eight-car train completely over the



Thumb-switch shunting control panel at Upminster, L.T.E., with microphone at left of console

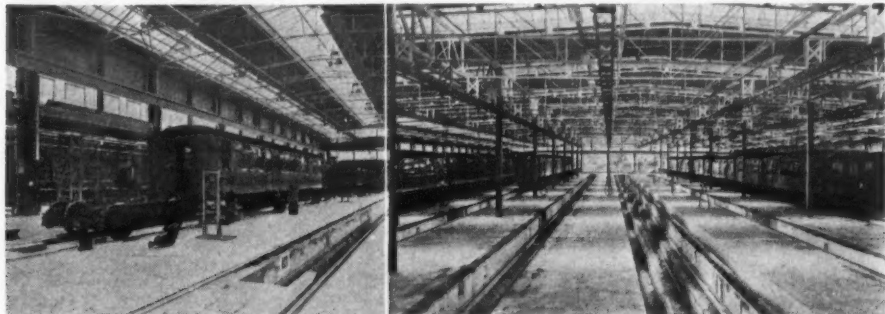
controlled remotely from Heathway control station, and provides power supplies for the various electrical services in the depot. In addition to the existing depot loads it is also designed to take over, at a later date, the present functions of Upminster Bridge substation and provision has been made in the building to accommodate the additional equipment for this purpose.

Supply is brought in an 11,000-volt duplicate cable circuit from Heathway substation and connects to the HV switchboard via truck-type oil circuit breakers rated at 250 mVa. Truck-type breakers of the same rating distribute the supply to the various equipments. Metering and protection equipment associated with the HV board are mounted on a separate panel. Direct current supplies for traction and other purposes are given at 630 volt d.c., from two 12-phase steel bulb mercury arc rectifier units each rated at 1,500 kW. To accommodate the additional load from Upminster Bridge substation, previously mentioned, the present installed capacity of 3,000 kW would be increased to 6,000 kW by the addition of two similar sets.

Five Present Circuits

At present the board serves five outgoing circuits, three for traction purposes, one for the depot trolley system and one for the depot workshops. The high-speed circuit breakers controlling these circuits are interchangeable and each is fitted with a rate-of-rise tripping feature which enables the breaker to be closed on to the heavy standing loads which occur frequently during winter months. Supplies for lighting, heating, and other a.c. services are given from an 11-kV 415-volt 500 kVa oil-cooled outdoor transformer and are distributed from an auxiliary switchboard via hand-operated fused switch isolators.

Two lead-acid batteries complete with chargers are provided, giving supplies at 110 volts d.c. for switchgear-closing purposes and 50 volts d.c. for switchgear tripping. These supplies are distributed via fused switch isolators from a separate battery distribution switchboard. Compressed air for sig-



Lifting shop at Upminster depot and, right, car examination shed, showing side pits on one road and jumper cables suspended from roof for moving trains in the depot

nalling purposes is supplied from two electrically driven water-cooled compressors, one working and one standby, which are housed in the separate compressor annexe at one end of the building together with a similar set supplying air for general depot usage. Each compressor has a capacity of 100 cu. ft./min. at 125 lb. sq. in. Water is extracted from the compressed air in two stages by a new method. The air is compressed to 125 lb. sq. in. instead of the usual 70 lb. sq. in. and after leaving the compressor, is first passed through an after-cooler unit where it is cooled to a temperature slightly above ambient and the primary water content condensed out, the coolant being water in a closed circuit with forced draught cooling. From the after-cooler the air passes to an air reservoir and then to the usual outdoor cooling grid. The air then passes through an expansion valve which reduces the pressure to the normal operating value of 70 lb. sq. in. This sudden expansion results in the dewpoint being reduced to a temperature lower than freezing point with a consequent reduction of the likelihood of signal equipment failures due to the freezing of water in the compressed air system.

Shunting Control Tower

At Upminster a different method of working of trains into and out of the sidings has been introduced. At other depots it is the practice for shunters to operate points by hand and trains are hand-signalled from the ground. The method adopted at Upminster is that control of all the points, which are power operated, is provided from thumb switches in the shunting control tower and the shunter gives instructions to the drivers by means of loudspeakers. Track circuits are provided throughout the depot and give the usual illuminated indications on the track diagram. The equipment, however, is not of a full signalling standard; much cheaper apparatus and cabling have been employed. The track circuits are a.c. fed to the track rails, but Post Office 3,000 telephone-type relays are used in conjunction with a rectifier as the track relay.

The point operating equipment comprises a simple compressed-air cylinder, which operates the point switches direct, and no provision for locking is made. Electrical detection is, however, provided on the points. The loudspeakers are arranged to give a "talk back" facility. For this purpose, a large number of small loudspeakers placed close to the ground is employed; they are situated so as to be close to the front of a train, the driver of which is to receive instructions. The loudspeakers are switched in, one at a time, by pressing an appropriate button on the track panel, and speech is heard only from the one loudspeaker switched in. The shunter in the control tower gives instructions to the driver and, on releasing the button, the loudspeaker automatically switches

(Continued on page 14)

Apart from the main depot buildings, there are three associated buildings or structures—the new substation and adjoining shunting control tower; the signalbox, relay room and yardmaster's office at Upminster Station; and the train-washing machines. The new single-storey substation is of brick construction, faced with Leicestershire sand-faced bricks, and has a pitched roof of steel trusses covered with asbestos sheeting providing double-skin cavity insulation. It is of the un-manned type

* The first portion, with a diagram, appeared September 26.



Public Address Systems

S.T.C. Public Address Systems are in use in several regions of British Railways. The system, which can be planned to suit particular needs, can be applied to marshalling yards, signal cabins and engine sheds. It is particularly suitable for relaying passenger information on station platforms.



COWLAIRS (GLASGOW) RESIGNALLING

Illustration shows a typical Public Address Installation by S.T.C. at Cowlairs. This system is used to enable signalmen to address staff in a nearby yard via loudspeakers mounted on standards.

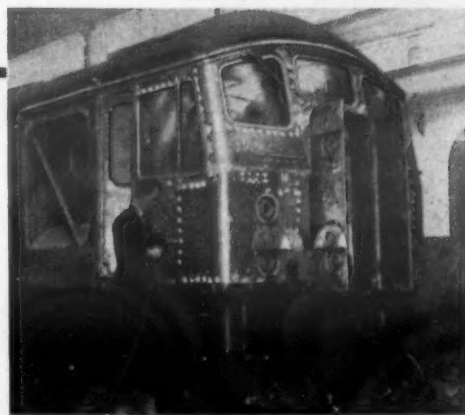
Other S.T.C. systems and equipment for railways include:

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MUNICIPAL TRANSPORT

Annual Conference in Edinburgh

COMMENCING on Monday, September 21, with the golf competition organised by the *Transport Journal*, the ladies putting competition and the bowls competition, the annual conference of the Municipal Passenger Transport Association in Edinburgh pursued a very full programme which ended with a well-organised, if somewhat damp, visit to the B.P. ocean tanker terminal at Finart on Loch Long on September 25. Winners of the golf competition were recorded in our last issue. That evening there was a cocktail party given by the Esso Petroleum Co., Limited. The more formal proceedings commenced on the Tuesday morning when, in the absence of the Lord Provost of Edinburgh who was paying an official visit with the Lady Provost to Warsaw, Senior Bailie A. D. Jameson welcomed the conference to the city. He hoped that among the more tangible results might be some guidance as to means of reducing operating costs with a consequent maintenance of fares at the present level—they in Edinburgh were just about to increase theirs. The president, Mr. Frank S. Taylor, said that the association was very glad to come back to Edinburgh and looked forward to the conference with the keenest anticipation. On a sadder note they must, as visitors, express their sympathy with all those affected by the recent pit disaster at Auchengiech.

Incentive Bonus Schemes

Mr. Taylor then delivered his presidential address and thereafter Mr. Ronald Cox (engineer and general manager, Rochdale) presented his paper "A Review of the Pros and Cons of Incentive Bonus Schemes for Traffic Staffs." An abstract of this paper and editorial comment thereon and upon the presidential address appeared in MODERN TRANSPORT of September 26. The discussion was opened by Alderman J. H. Whitaker (Tadmorden)

as was reasonably to be expected. Next came Alderman S. P. Hill (Nottingham) who found it difficult to envisage an incentive bonus scheme for traffic staff which would not lead to dissatisfaction by reason of the wide variety of services operated. Every undertaking had services which did not and never would pay. If good labour relations were to be achieved, employees in the transport industry, just as in any other, needed to be assured of a consistent increase in earnings every week. He knew of no undertaking that could afford to give such an assurance. It was patent that any scheme to be successful must be on a national basis.

It was pointed out by Alderman R. Weir (Blackburn) that productivity in transport could never be so variable as in industry generally and that was, of course, a major cause of the higher earnings in other industries set out by Mr. Cox in his paper. It must also be remembered in connection with the 1938 comparisons that bonus schemes were not then in operation. There was no denying that such schemes had increased markedly the prosperity of the country, but it was very doubtful whether any of the three schemes—Manchester, Sunderland, and Bury—could be recommended as a national basis and it was only on such a basis that the municipal passenger transport industry could work. Mr. N. Morton (Sunderland) argued that a major benefit of any incentive scheme was not the extra money earned each week, but the psychological one of reducing the gap between the employer and the employee. As things were, ideas usually came from the top, but if they wanted true productivity they must bring every man into the line of management. The present schemes could only be pilot ones, but surely they should persevere in the hope that they would grow into worthwhile national projects. Mr. T. Bamford (Doncaster) felt that any scheme adopted must be a truly national one covering all operators, for

many municipal undertakings worked jointly not only with their neighbours but also with company operators.

An excellently organised visit to Walter Alexander and Co. (Coachbuilders), Limited, Falkirk, took place in the afternoon and in the evening there was an informal reception by the president and Mrs. Taylor at the North British Hotel. The business next morning commenced in private with the annual general meeting of the M.P.T.A. This was concluded so swiftly that discussion of Mr. Cox's paper was resumed earlier than planned and members of the Press were consequently unable to report it. Replying to the discussion Mr. Cox felt that it had largely gone to support his argument that none of the schemes so far introduced were suitable for national application and, although they were brought in to increase productivity, it was open to doubt whether they were fully effective in that respect. The problem of bonus incentives was so bound up with the basic wage structure that this should first be thoroughly examined and overhauled to find a more appropriate principle to apply.

N.J.I.C. Defended

The revision of the programme meant that Councillor Alker presented his paper "The Future of Municipal Transport" on Wednesday morning, thereby making more time available for its discussion. (An abstract appeared in MODERN TRANSPORT of September 26.) This was opened most militantly by Mr. G. A. Cherry (Birkenhead) who had been stung by criticisms of the N.J.I.C. visiting committees. These had done very good work and saved undertakings from serious strife. Alderman W. Flynn (Middlesbrough) was also eloquent upon the benefits of the visiting committees, which were one of the best pieces of industrial machinery in existence. Rate aid could never be considered seriously as a solution to municipal transport problems. It would put transport in the hands of the finance committee and the borough treasurer and it would be much better to have a strong transport committee. Little consideration had so far been given to the cost of providing bus services for industry because most people had various types of operation and had not bothered to separate the categories. He was also a member of

the Tees-side Railless Traction Board which operated what were almost entirely workers' services and had found one firm ready to meet it on the subject. Nationally there was a need for industry to realise that getting people to its works was as important as getting raw materials there.

A remark by Mr. Cherry that anybody could make a profit running buses in Manchester was said by Alderman A. Logan (Manchester) to be anything but true—unfortunately. So long as people had to be carried from their homes to their place of work, entertainments and the like there would always be a future for municipal transport. It was, however, essential that there should be greater co-operation with companies operating stage services. The conflict of interests in any possible area scheme was such that some central negotiating body was essential. Alderman L. Chaffey (Birmingham) seized the opportunity to demand for local authorities a more appropriate share of the revenue from road taxation and Mr. W. C. Wilson (Stockton) asked how it was possible to drive home to the Ministry of Transport the vital needs of the industry when the Ministry was subject to more pressure from motorists. On the subject of wages they really must make up their minds. They said that the staff was not adequately paid, yet every application for increases was opposed tooth and nail. Mr. N. Morton (Sunderland) agreed with that point and suggested that in the event of a 40- or 42-hr. week becoming general the industry would have a good opportunity to make another drive for staggered hours.

An Anachronism

Councillor H. M. Drummond (Luton) felt that the paper underestimated the problems which faced the rest of industry and its workers. To talk of abolishing weekends, bank holidays and so forth made no allowance for the problems of family life. Road and rail integration must come to an increasing extent and urban and interurban operations must be more closely linked. Any bus with empty seats which passed waiting passengers was an anachronism which the industry could not afford. Alderman E. Ball said any form of remote control was anathema to him. He thought there was some scope for pooling vehicle maintenance and, for that matter, purchasing. In his reply Councillor Alker said that contributions had not in any way contradicted his first suggestions. He had not proposed that consultants should be engaged for research work—the N.J.I.C. should do its own. The alternative to parochial municipal management was not necessarily nationalisation but there was certainly room for the more efficient running of undertakings with whatever wider inter-operation and combined services that entailed.

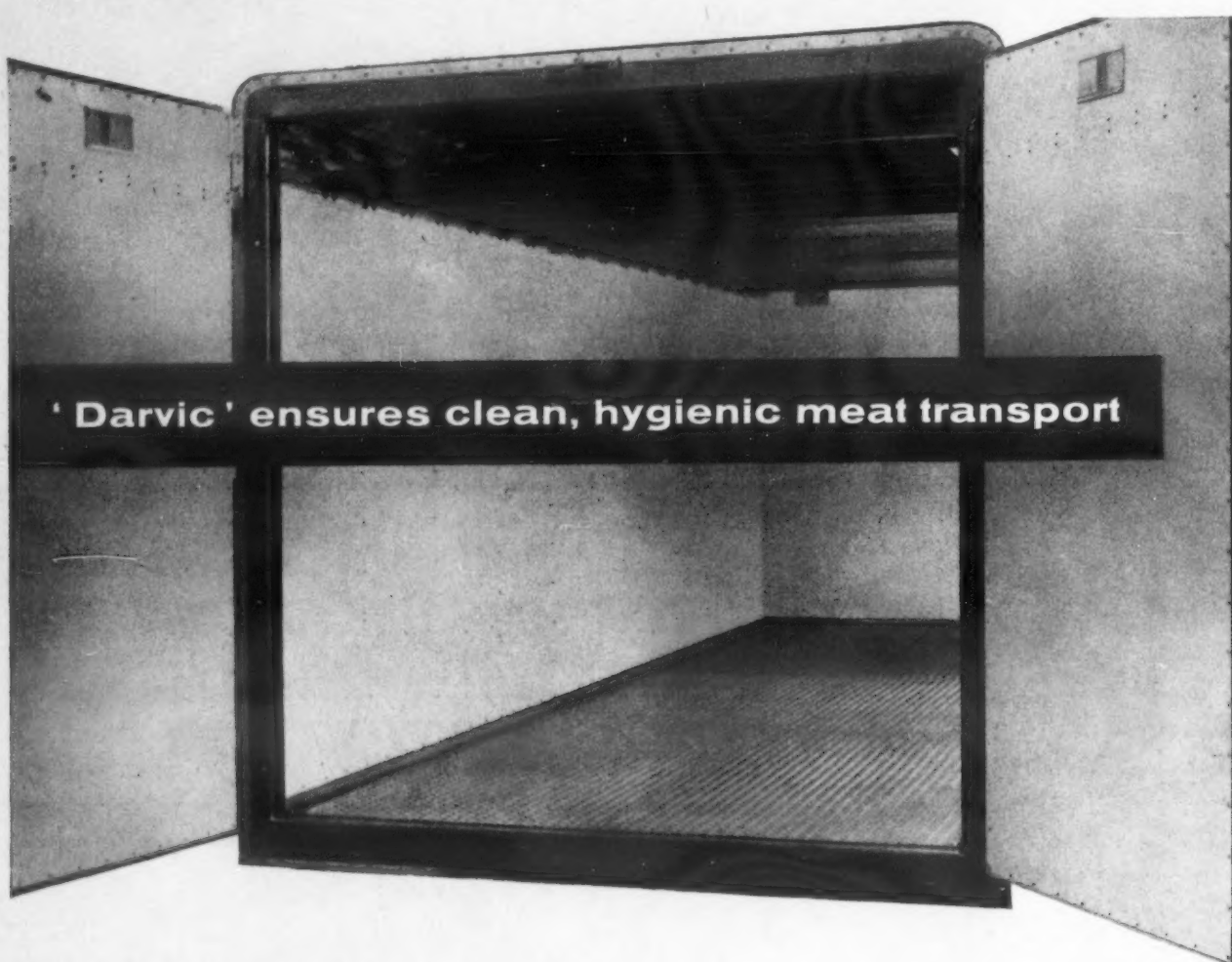
There had been a civic reception in the Assembly Rooms on the Wednesday evening and on the following afternoon, which was free after a cocktail party given by the Regent Petroleum Co., Limited, Edinburgh Corporation Transport thoughtfully arranged a tour of the city for one party and a visit to its Shrubhill works and Longstone garage for another. Both were greatly appreciated by those who took part. That evening the annual dinner of the M.P.T.A. took place at the Music Hall and Assembly Rooms. The president proposed the toast "The City of Edinburgh" and said how good it was to be back there after nine years. As a Northumbrian he felt particularly close connections with the Scots, although in the past relations might sometimes have been rather strained. They much appreciated the presence of the Lord Provost and the Lady Provost especially since they had only arrived back that day from their visit to Warsaw.

Lessons from Abroad

Replying, the Lord Provost (Sir Ian A. Johnson-Gilbert) said how much he and his wife had enjoyed that visit. He felt that such occasions could do nothing but good. Visits abroad always served to remind him that although there might be complaints about transport in British towns and cities, we did not, in fact, have much at which to grumble. The toast of "The Guests" was proposed by Mr. A. F. Neal (vice-president) and the response was by Mr. W. F. Quin, chairman of the Scottish area Traffic Commissioners. Alderman J. H. Whitaker, immediate past president, proposed "The Retiring President" and Mr. Frank S. Taylor said how much he had enjoyed the year of office and how much he had been helped by all concerned.

Forthcoming Events

- October 3-4.—Omnibus Society. Presidential weekend including visit to Sunderland Corporation Transport and annual dinner.
- October 5.—Institute of Road Transport Engineers (Scottish). Paper by Mr. H. L. Parish, "The Development and Application of the 4-90 Diesel Engine." At Institution of Engineers and Shipbuilders, Embankment Crescent, Glasgow. 7.30 p.m.
- October 6.—South Wales and Mon. Railways and Docks Lecture and Debating Society. Paper by Mr. E. J. Phillips, "Phases of Road Passenger Transport over the Years." At Angel Hotel, Cardiff. 6.30 p.m.
- Institute of Road Transport Engineers (Eastern). Paper by Mr. E. B. H. Elsbury, "A Review for the Selection, Specification and Simplification of a Commercial Vehicle." At Swan Hotel, Bedford. 7 p.m.
- Institution of Mechanical Engineers (Automobile). Chairman's address by Mr. L. H. Dawtry, "Some Problems We Meet." At 1 Birdcage Walk, S.W.1. 6 p.m.
- Institute of Transport (Midland). Paper by Mr. J. G. Giles, "The Work of the Motor Industry Research Association." At Engineering Centre, Stephenson Place, Birmingham. 6.30 p.m.
- Electric Railway Society (West Midland). Paper by Mr. J. R. Bates, "The Glasgow Underground." At Engineering Centre, Stephenson Place, Birmingham. 7.15 p.m.
- October 7.—Railway Students Association. Annual general meeting. At London School of Economics, Houghton Street, W.C.2. 6.15 p.m.
- Institution of Naval Architects. Paper by Dr. E. C. P. Corbett and Mr. E. P. Hawthorn, "The Prospect for a Nuclear-powered Cargo Liner." At 10 Upper Belgrave Street, S.W.1. 4.45 p.m.
- Electric Railway Society. Paper by Mr. J. G. Bruce, "Keeping Underground Wheels Turning." At 183 Drummond Street, N.W.1. 7.15 p.m.
- Institute of Road Transport Engineers (East Midlands). Paper by Mr. J. F. Moon, "Transport Developments in the U.S.A.—1957." At Mechanics Institute, Nottingham. 7.30 p.m.
- Institute of Petroleum. Paper by Messrs. A. de F. Barros and A. Dyson, "Piston Ring Friction: Rie Measurements with Low Viscosity Oils." At 61 New Cavendish Street, W.1. 8.30 p.m.
- Peterborough Railway Discussion Group. Paper by Mr. C. S. McLeod, "Industrial Relations—How?" At Technical College, Eastfield Road, Peterborough. 6.45 p.m.
- October 9.—Institution of Electrical Engineers. Presidential Address by Sir Willis Jackson. 5.30 p.m.
- October 10.—Southern Counties Touring Society. Social evening. At Princess Louise Hotel, 208 High Holborn, W.C.1. 6.30 p.m.
- Norbury Transport and Model Railway Club. Visit to the Tower Subway.
- Permanent Way Institution. Joint visit to Belfast with Irish section.
- October 12.—Institute of Transport. Presidential address by Mr. R. G. Groat. At 86 Portland Place, W.1. 5.45 for 6.15 p.m.
- October 12-16.—International Air Transport Association. Annual general meeting. In Tokyo.
- October 26-28.—Road Haulage Association. Annual conference. At Bournemouth.
- November 12.—Public Transport Association. Annual dinner. At Connaught Rooms, Great Queen Street, W.C.2. 6.45 for 7.15 p.m.



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'Darvic' p.v.c. sheet used in Litex meat transport containers made by Walkers and County Cars Ltd., Fleet. (Below) Reeded 'Darvic' on the floor gives a non-slip surface; (Above) 'Darvic' panelling on walls and doors.

These Litex meat transport containers made by Walkers and County Cars Limited, Fleet, make valuable use of 'Darvic' p.v.c. sheet. In one, the walls and doors are panelled with 'Darvic'; in the other, 'Darvic' is used on the floor and is reeded to give a non-slip surface.

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STORAGE DEPOT IN EAST ANGLIA

On Former M. and G.N. Site

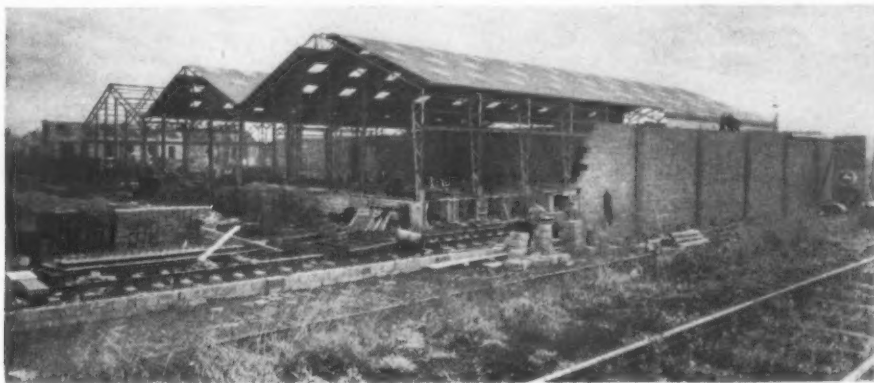
NOTABLE EXAMPLE OF ROAD-RAIL CO-OPERATION

AN outstanding example of co-operation between British Railways and a privately-owned transport and engineering group in the erection and operation of a storage and distribution depot is now fast taking shape near Kings Lynn on the site of the former South Lynn goods and passenger station, rendered redundant as a result of the closure of the Midland and Great Northern line. On this site the Pointer Group of companies, which has its headquarters in Norwich, has completed, in the short space of only three and a half months from the original concept of the project, the first section of a 400,000 cu. ft. dry goods and refrigerated store with road and rail facilities, initially to handle the canned food products of a nearby factory and imported goods for the same customers.

The time elapsing from the ground breaking to first token delivery of goods for cold store was just two months—as an indication of the haste with which the construction has gone from the start it may be mentioned that the first contact with

13,000 cu. ft. capacity. The floor of these chambers was cast using Betocel foamed insulating concrete, for which Pointer holds the U.K. concession. The suspended floor generally is designed to carry a superimposed load of 1,000 lb. per sq. ft. over a 12 ft. 6 in. clear span.

The building consists of three bays, each 60 ft. wide and the completed storage structure will be 180 ft. wide by 140 ft. long, i.e. excluding siding accommodation. The framework is of the Coseley standard pattern, which is particularly suitable in a storage building as the tapered verticals and clear headroom provide the maximum space. Overall height is 20 ft. to eaves, slightly less internally owing to the raised floor. Externally the building has the curved eaves and ridge which are features of a Coseley structure, and the sheeting is in Color-glaze asbestos cement. The roof is in Westmorland green while cream panel sheets are used on the front gable and round the sides to meet the concrete roof of the brick structure. Verticals to the portal frames are galvanised. In the cold store



This is how the new Pointer storage depot at South Lynn looked eight weeks after ground was first broken. One of the two rail sidings is seen immediately behind the boundary wall; the other is on the far side. The cold store is seen behind the completed section of wall

Coseley Buildings, Limited, of Wolverhampton, which supplied the steelwork and cladding, was made by telephone at midnight, the physical shape of the depot having been decided on at 3 a.m. a few days earlier. Negotiation of a lease of the site from British Railways was concluded within the period of one month and its engineers had all surplus rolling stock and track removed well before the construction engineers were ready to take over.

Credit for these fast decisions on the part of the Eastern Region must go in the first place to the current policy of decentralisation of decisions, then to Mr. W. A. G. Suddaby, Cambridge traffic manager, who immediately took in hand the initial approach made to him by Mr. Peter Pointer, 30-year-old managing director of the fast-growing Pointer Group. Mr. Suddaby was able quickly to put the project before his officers at Great Eastern Line headquarters, who gave their approval with equal celerity.

Origin of Project

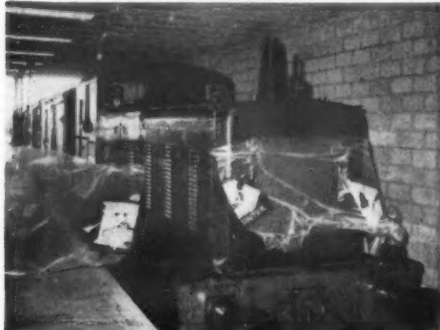
The proposal that a large distribution depot should be made available at Kings Lynn emanated in the first place from Campbell's Soups, Limited, a company of United States origin which has recently erected a factory at Kings Lynn, and which is at present importing quantities of canned products and raw materials from Italy and elsewhere. These raw materials, which include such items as okra (a green pod used in soups) and celery in barrels or

section they are placed at 25-ft. centres to accommodate the refrigeration apparatus, as against 12 ft. 6 in. and 15-ft. centres in other parts of the building. Sliding doors enclose the two railway sidings which are housed in roofed-over brick extensions at either side of the store proper.

Cold Storage Rooms

The eight cold rooms are insulated with expanded polystyrene of sufficient thickness to enable a temperature of -10 deg. F. to be maintained, but at present six of these rooms are being maintained at that temperature with the remaining two rooms operating on one condensing unit and maintaining a temperature of 32 deg. F. The refrigeration equipment used is eight L.C. Sterne 15-h.p. water-cooled condensing units, six of these units operating independent rooms, each room having two Searle Bush forced convection coolers, and the eighth unit, being a spare unit but connected into the circuit in such a way that it can be brought into operation at any time. The condensing units are mounted on the roof of the cold store section.

An audible alarm connected to an indicator panel will be fitted which can be operated from inside any coldroom should any difficulty arise whilst the operator is inside the store and unable to open the door from the inside by normal means. Minivell air curtains are fitted to each door to minimise the air change during loading and off-loading of the coldrooms, and these air curtains dispose of the



On opening day the first delivery of cartoned goods arrives behind a B.R. 204-h.p. diesel shunter and, right, is unloaded into store



drums, require cold storage. The new Lynn factory is rail connected and it will be possible to transfer stocks in bulk thence by rail direct to the new warehouse at South Lynn.

As already indicated, the first phase in the development is the completion of 300,000 cu. ft. of dry goods storage space and 100,000 cu. ft. of refrigerated space (equivalent to about 1,000 tons of goods). Plans are in hand for further expansion. Next year it is hoped to double the size of these stores and during the next two years to develop the rest of the sidings for the handling of bulk minerals from special rail wagons to road vehicles for area distribution.

Storage will be offered, space permitting, to any manufacturer desiring to serve the East Anglian area and imported traffic can, of course, be received through Kings Lynn docks. The first goods moved into a completed section of the cold store on September 14, 14 days ahead of promised date, and dry goods space was also available on that date, awaiting a ship from Italy. Mechanical handling equipment will be installed for depot working.

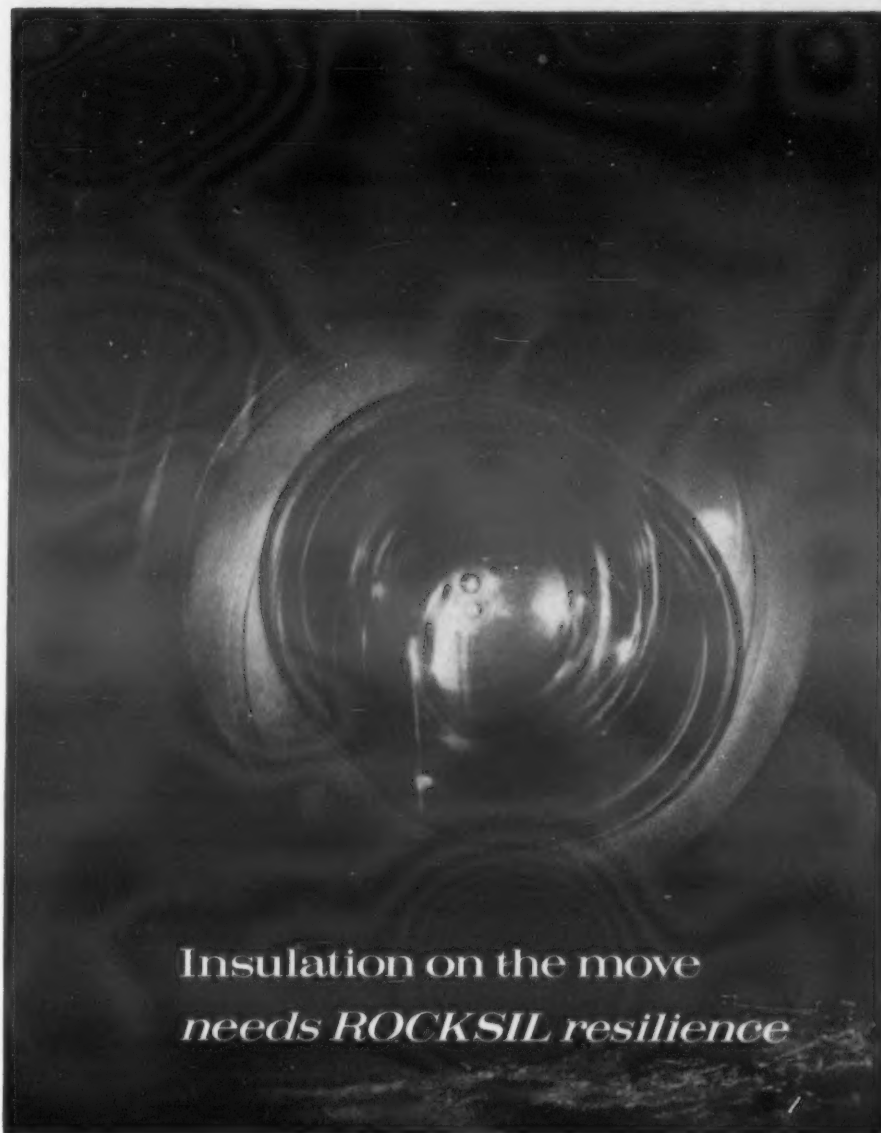
Foundations

It is only 10-11 weeks since the inquiry for the necessary piling work was received by Frankpile, Limited, of London and St. Albans, and four days later, a weekend intervening, the first piling frame was on site. Over 400 piles will be required in the present scheme, each up to 45 ft. long and capable of bearing a load of 40 tons. Hydraulic Precasts, Limited, a member of the Pointer Group, cast the massive concrete beams which fit across the pile caps and in turn take the suspended floor to the cold store and the dry goods store. In the cold store section there will be eight chambers, each of

Ferodo, Limited, has opened new premises at 3 Condercum Road, Newcastle-upon-Tyne, 4 (telephone Newcastle 39131), replacing the accommodation in Barras Buildings which the company has occupied in the city for the past 24 years.

As a result of numerous inquiries, the Institute of Advanced Motorists is setting up new test routes in East Anglia. Tests have already started at Ipswich and started at Norwich on September 28. Up to the end of August this year a total of 20,931 tests had been conducted by the institute's examiners.

Sir Francis Glynn, on medical advice, retired on September 30 from the London Midland Area Board of the British Transport Commission. In his place Major-General G. N. Russell has been appointed a member of that board and accordingly relinquished his membership of the Eastern Area Board.



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EAST KENT GARAGE REBUILT

Dover Recovers from War Damage

ON September 24 directors of the East Kent Road Car Co., Limited, inspected the company's reconstructed garage at Dover, now fully recovered from its wartime damage. The inspection party comprised the chairman, Mr. R. P. Beddow, other directors including Colonel T. V. H.

name "Hellfire Corner" in the late war the garage suffered a direct hit in an air raid on March 23, 1942; further damage was suffered in later raids. Commencing in December, 1957, the garage was re-built and extended by the absorption of Phoenix Lane and part of the site of the adjoining brewery,

consumption is 4,000 gal. each week, but the weekly figure may rise to 7,000 gal. in periods of maximum demand. A lubricating oil supply totaling 1,000 gal. is available.

The rebuilding of the garage gives the traffic department a useful new facility. In the summer of 1958 a fleet of 78 vehicles was allocated to Dover; the winter demand was 49. In the summer of 1959 the allocation has been 98 (34 double-deck, 16 single-deck and 48 coaches) and during the winter of 1959-60 the total allocation will be 56—29 double-deck, 11 single-deck and 16 coaches.

The architects were Messrs. H. Campbell Ashenden and John Clark. Main contractor was S. L. Watts, Limited, Sandwich, and among the



The reconstructed Dover garage of the East Kent Road Car Co., Limited, which was officially inspected last week

Beamish, M.C., M.P., and Messrs. W. H. F. Mepsted, T. Robert Williams and W. I. Winchester, the Mayor of Dover and officials of the town council.

In the autumn of 1923 the East Kent company acquired from the Dover Gas Company the site bounded by St. James' Street, Phoenix Lane, Dolphin Lane and Fectors Place; in 1924 there was built on part of the site a garage accommodating 35 buses. In 1934 the garage was enlarged to hold 54 vehicles. Later the company took responsibility for the local municipal transport when the trams were abolished. When the Dover area earned the

the under-cover working capacity of the new building being 75 vehicles. New workshops, offices, and fuel storage installations have been provided whilst the lowering of the garage floor permits use of highbridge double-deckers.

Capacity

The new garage occupies a site 3,980 sq. yd. in extent; of this the floor area represents 3,450 sq. yd. It could store 90 vehicles close parked, but 75 represents a convenient working capacity. The fuel oil storage capacity is 30,000 gal.; the average

principal sub-contractors were Hamilton Slade and Co., Limited, of Folkestone (steelwork), Regent Oil Co., Limited (fuel storage installation), S. W. Bligh, Limited, of Canterbury (electrical installation), W. G. Flanders and Son, Limited, of Canterbury (heating equipment) and Alfred Olby, Limited, of Ramsgate (hardware). We are indebted to Mr. R. G. James, general manager, East Kent Road Car Co., Limited, for the foregoing particulars. The company's chief engineer is Mr. S. H. Loxton and the traffic manager Mr. P. W. Dodge.

UPMINSTER DEPOT

(Continued from page 11)

over to function as a microphone. The driver then acknowledges the message by leaning out of his cab and speaking in the direction of the loudspeaker. The sound is picked up by the loudspeaker, amplified and reproduced on a loudspeaker in the control tower. This system functions to give the drivers instructions to move their trains, and takes the place of the usual fixed signals.

Avoiding Confusion

A few emergency red lights have, however, been provided. The intention of these lights is that, if the shunter should hear more than one driver acknowledge his message, or a confusion of acknowledgments, he then lights up a red lamp by pressing a switch. This can be seen by any of the drivers. According to the instructions given, all trains are brought to rest if the red lamp is lit. This special lamp comprises a 500-watt bulb, fixed behind a prismatic lens of the ship's lantern type, giving a wide spread of light.

In addition to the regular service drivers taking trains into service, a shunter-driver is employed in the depot for moving trains from siding to siding, or into the sheds, as required. To maintain constant communication between this man and the control tower, v.h.f. radio is provided. The shunter in the control tower has a 3-watt radio transmitter and receiver, operating from an aerial mounted on top of the tower. The shunter-driver carries a walkie-talkie set to give communication with the control tower at any time. The set was designed and built by London Transport staff. It is operated by transistors throughout, including the high-frequency and oscillator stages. No such set was available for purchase. The set is considerably lighter and less bulky than a valve-type receiver and runs on three pocket lamp batteries. Trains leaving the depot to proceed to the main line are shunted into the reception roads by the shunter, and at this point come under the control of the normal signalling, with full signalling safeguards, worked by the signalbox situated at Upminster Station.

CHISWICK FLYOVER

(Continued from page 7)

are 72 ft. long, each weighing about 24 tons. They are placed side-by-side on the bearings, and in situ concrete transverse diaphragms are cast between the beams and around metal ducts passing through the beam webs. The joints between the beam flanges are filled with concrete, and an in situ concrete deck is cast at the level of the top of the beams. Each half of the deck is pre-stressed transversely by the Freyssinet system with 12 wire cables 0.276 in. diameter threaded through the transverse ducts.

Rubber bearings have been adopted for this bridge. Each beam bears upon a Lincoln type rubber and steel bonded unit 16 in. by 11 in. by 7 in. thick at the "free" end and upon a sheet rubber pad 16 in. by 11 in. by 1 in. thick, reinforced with canvas, at the "fixed" end. The maximum dead load end reaction per beam is 32 tons, and the live load reaction 28 tons. Each bonded rubber bearing is tested with a compression load of 90 tons and a shear load of 8 tons simultaneously with a compression load of 30 tons. "Fixed" end bearing pads are tested with a compression load of 80 tons. It was considered that the use of bonded rubber bearings was particularly applicable to this type of skew bridge as the deck of each half forms a parallelogram of approximately equal sides and there is a tendency for expansion and contraction movements to occur in both longitudinal and transverse directions.

Precast beam units were supplied by Cowley Concrete Co., Limited; Mechanite bridge bearings by the Butterley Co., Limited; rubber bearings by Andre Rubber Co., Limited; and parapet railings by T. W. Palmer and Co., Limited. Sub-contractor for bridge piling was Braithwaite Foundations and Construction, Limited. The main contractor, as already mentioned, was Alderton Construction Co., Limited.

The consulting engineer to the Ministry of Transport for the design and supervision of the Chiswick flyover scheme is Mr. Harry Brompton, B.Sc., (Eng.), M.I.C.E., M.I.Struct.E., M.Cons.E. The consulting architect is Mr. George Stewart, F.R.I.B.A.

OFFICIAL NOTICE

NIGERIAN RAILWAY CORPORATION

SENIOR ASSISTANT COMMUNICATIONS ENGINEER

THE Nigerian Railway Corporation invites applications for the following post: Senior Assistant Communications Engineer.

Duties: The officer will be responsible to the Signal Engineer or his representative for the planning, installation, maintenance and development of

- Teleprinter and Telegraph Systems, Single and Multi-channel.
- Carrier Transmission and Multi-channel Voice Frequency Systems.
- Radio, HF, VHF Systems.
- Telephone Exchanges, Automatic and Manual.
- Pole Line and Cable Systems.

Qualifications: Candidates must have a sound theoretical and practical experience in the principles of communications and modern developments therein. A working knowledge of Telephone Train Control and Single Line Block Working apparatus as used on Railways would be an advantage. Candidates with Associate Membership of the Institution of Electrical Engineers in Communications or Radio may be given preference. Candidates must have held a responsible post in the field of communication for five years and must have a minimum of 10 years' experience in communications.

Salary: In scale £1,875 by £50 per annum to £2,075 (inclusive of Overseas Pay). Appointments may be on pensionable terms or on contract with a gratuity payable on completion of contract at the rate of £31 5s. 0d. to £34 11s. 8d. for each completed month of service.

Tours: 15 months in Nigeria followed by 15 weeks' leave on full pay.

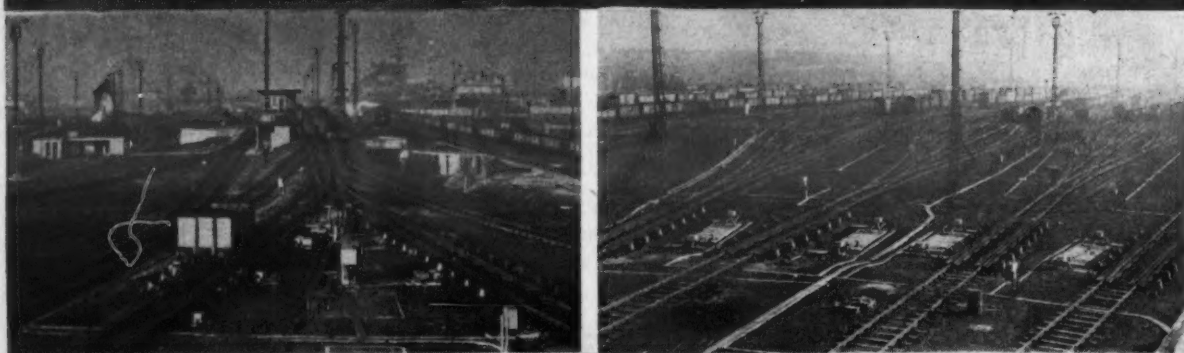
Quarters: Partly furnished quarters are provided at low rental.

Allowances: There are attractive family, travelling, transport and other allowances.

Send postcard before October 15, 1959, mentioning the post and this paper for further particulars and application form to:

The London Representative, Nigerian Railway Corporation, Nigeria House, 9 Northumberland Avenue, London, W.C.2.

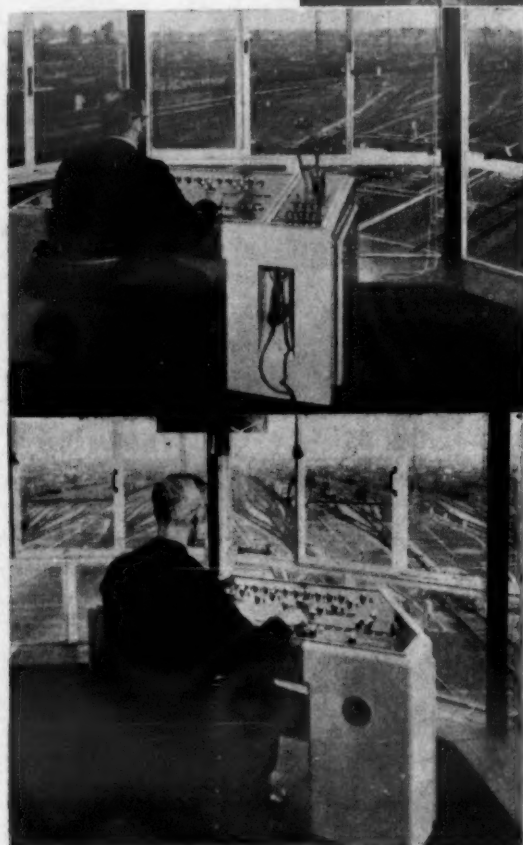
MARSHALLING YARD OPERATION



WITH WESTARDAIR RETARDERS



at Temple Mills



Thirty years of practical experience is embodied in the design and construction of these



WESTARDAIR RETARDERS
They give maximum reliability with minimum of maintenance, are flexible, easily installed without heavy foundations, and can be mounted on curves.

A further installation is now in hand at Perth, Scottish Region, where the operation will be **FULLY AUTOMATIC**

Made in England and installed by
Westinghouse Brake and Signal Co. Ltd.

82 York Way, London, N.1

Westinghouse are also licensed to manufacture, and will be pleased to supply the SAXBY type retarder.

SOCIAL AND PERSONAL

Traffic Consultant for Dublin

THE well-known German road traffic engineer, Dr. Max-Erich Feuchtinger has been appointed as consultant to conduct a Dublin Corporation survey of the traffic problems of the city. The survey is to begin this month and is expected to occupy several months. Dr. Feuchtinger will make recommendations for the relief of congestion and for the rerouting of traffic away from the city centre.

The Goodyear Tyre and Rubber Co. (Gt. Britain), Limited, has appointed Mr. W. R. Booth financial director and secretary.

We regret to record the sudden death, at the age of 48, of Mr. R. H. Whittington, assistant chief operating superintendent, East African Railways and Harbours. Mr. Whittington had served for 10 years with the E.A.R. & H., following 23 years' service to the Great Western Railway.

Mr. F. Edwards, assistant general manager of the Siemens and General Electric Railway Signal Co., Limited, has just retired from the company's service after nearly 37 years' service. He was appointed sales manager when S.G.E. was formed in 1926 and made assistant general manager in early 1957.

As already announced, Mr. J. C. Spark, M.I.Mech.E., M.I.Loco.E., has been appointed works manager, Doncaster, Eastern Region, B.R., in which capacity he will be in charge of the combined locomotive carriage and wagon works at Doncaster under the recently announced reorganisation of technical departments. Mr. Spark was educated at Aberdeen Grammar School and commenced his railway career in 1922 as a premium apprentice at the Inverurie locomotive works of the former Great North of Scotland Railway, and later at the Cowlairs works of the London and North Eastern Railway. In 1929 he was appointed assistant to the works manager at Cowlairs and subsequently held various managerial positions in the locomotive, carriage and wagon works, until his appointment as locomotive works manager at Doncaster in 1945. He was seconded to the Locomotive Manufacturers' Association for service in Chittaranjan, India, as production engineer in 1951. He returned to his position at Doncaster in 1954, and this is the post he left to take up his new appointment.



Mr. J. C. Spark

Mr. J. A. Kemp has relinquished his appointment as chief designer of Albion Motors, Limited. He retains his seat on the board and continues as engineering consultant. Mr. E. B. Stead has been appointed chief engineer.

Mr. E. W. Hardiman has been appointed general manager (marketing) of Esso Petroleum Co., Limited. He succeeds Mr. W. H. Critchlow who has been appointed to the boards of the Cleveland Petroleum Co., Limited, and the Esso Petroleum Co. (Ireland), Limited.

In the final of the National Passenger Service Vehicles Cricket Competition, on September 8 on the Warwickshire County Ground at Edgbaston, Manchester Corporation Transport Department, losers in last year's final to London Transport (Country buses and coaches), went down again, but this time the winners from 35 teams were London Transport (Central Road Services). After the game the Wakefield Shield and individual plaques were presented by C. W. Page, sales manager of Wakefield-Dick Industrial Oils, Limited.

We regret to record the death on September 24 of Mr. William Percy Allen, one of the pioneers of the bus industry, a director of Aldershot and District Traction Co., Limited, and East Kent Road Car Co., Limited, and chairman of the Lincolnshire Road Car Co., Limited, from 1928 to 1955. He was 70 years of age. Recently he farmed in Wiltshire. In earlier years he operated buses in a large number of areas. He used Farningham, Kent, as a centre in 1913 for an undertaking which was acquired by the East Surrey Traction Co., Limited, in 1922, and had buses in London from 1913 to 1916. His businesses at Clacton and Folkestone passed to the Eastern National and East Kent companies respectively, and that in Lincolnshire formed the nucleus of the Lincolnshire Road Car business. An editorial note appears on page 1.



The late Mr. W. P. Allen

Mr. T. R. Manderson has been appointed Southern area manager for Benjamin Electric, Limited.

Mr. R. J. Pinder, C.B.E., has been elected chairman of the Cleveland Petroleum Co., Limited (a subsidiary of the Esso Petroleum Co., Limited). A member of the Cleveland board since 1955, Mr. Pinder succeeds Mr. H. C. Tett. He will continue in his position as a managing director of Esso. Mr. W. H. Critchlow has been appointed a director of Cleveland, and of the Esso Petroleum Co. (Ireland), Limited.

Mr. T. H. Pollock is resigning from the British European Airways Corporation at his own request and will relinquish his appointment as manager, Malta and North Africa, with effect from October 31. Mr. D. M. H. Russell, station superintendent, Geneva, is appointed manager, Malta and North Africa, from November 1, and his appointment as manager, Sweden and Finland, will not now take place. Mr. John Norton, sales manager, United States, is returning to London as assistant sales manager, and Mr. H. P. Lambe, manager, Turkey, is to become commercial and sales manager, Greece and Eastern Mediterranean.

Mr. F. G. Robbins retired on September 28 after having completed 44 years' service with the Avon India Rubber Co., Limited. He has been general sales manager since 1945. Following this retirement, Mr. C. H. Mason becomes director of special contracts. His post concerns the original equipment and mileage divisions of the company.

After 46 years on the editorial staff of *The Commercial Motor*, including 30 years as editor, Mr. G. Mackenzie Junner retired on September 30. Mr. A. E. Sherlock-Mesher has been appointed to succeed Mr. Junner as editor. He served on the editorial staff of the journal from 1928 to 1937 and has been assistant editor since 1946.

There were 80 competitors for the Ford dealers golf meeting held at Moor Park on September 21 in fine weather and also attended by non-playing guests. Prizes were presented by Mr. H. Mortimore, supported by Mr. J. E. Read (general home sales manager) and Mr. Frank Daniels (formerly tractor sales manager). Winners were as follows:

The Edsel Ford challenge trophy, Mr. H. M. Rummins (Dalblair Motor Co., Limited, Ayr); the Ford Times Challenge Trophy, Mr. T. St. J. Foster (Warrington Motor Co., Limited); the Lord Perry Challenge Trophy, Mr. S. T. Wood (Wood and Lambert, Limited, London); the Fordson Farming Challenge Trophy, Mr. R. E. M. Pugh (Prince and Pugh, Limited, Knighton).

Mr. P. Gray, A.M.I.Loco.E., has been appointed works manager, Stratford, Eastern Region, B.R., in which capacity he will be in charge of the combined locomotive, carriage and wagon works at Stratford under the recently announced reorganisation of technical departments. Mr. Gray was educated at Glasgow Technical College and started his railway career in 1931 as an apprentice engineer in the Cowlairs works of the London North Eastern Railway. In 1944 he was appointed to the position of assistant to the carriage and wagon works manager, Gorton Works, and in 1947 became locomotive works manager there. In January, 1951, Mr. Gray was appointed carriage and wagon works manager at Gorton, and in September, 1956, took up a similar appointment at Stratford works.



Mr. P. Gray

In six weeks, 50,000 persons have visited the Swiss House of Transport and Communications which was opened in Lucerne on July 1 this year. This is not only a museum, but also a centre of studies and documentation.

Monsieur Pierre Dreyfus, president and director general of the Régie Renault, has been made a commander of the Legion of Honour for his services to French industry. This is the highest decoration that can be given in France.

Mr. G. E. V. Thompson, manager of the London division of Shell-Mex and B.P., Limited, since 1954, retired on September 30 after nearly 38 years' service. He was succeeded by Mr. H. Mothio, the former sales manager of the division.

Mr. K. N. Sidebotham, assistant district passenger manager, Manchester, has been appointed to the post of district passenger superintendent, Newcastle upon Tyne, North Eastern Region, B.R. Mr. Sidebotham commenced his railway career as a junior clerk in the district goods manager's office, Manchester, in 1937. By 1957 he was assistant district passenger manager (sales), Manchester, being appointed to the above-mentioned position there last year.

At the annual general meeting of the Municipal Passenger Transport Association on September 25, Mr. A. F. Neal, general manager, Manchester Corporation Transport Department, was formally installed as president for 1959-60 and Alderman S. P. Hill, chairman, Nottingham Transport Committee, was elected vice-president. Mr. Neal announced that the conference next year would be held in Douglas, Isle of Man. A collection taken for the Scottish mine disaster fund realised more than £55.

Mr. A. R. Black, hitherto assistant secretary of the West Yorkshire Road Car Co., Limited, has been appointed secretary. Mr. Black, a qualified accountant, joined the Caledonian Omnibus Co., Limited in 1947 as accountant and transferred to West Yorkshire in 1949.



Nearly 100 golfers, nearly all of them in transport, competed for the Bonallack Challenge Trophy. Here, Mr. R. Y. Parkinson (Clitheroe) and his partner, Mr. J. J. Taylor (Autolifts and Engineering, Limited, Blackburn), receive the trophy from Mrs. R. F. Bonallack, wife of the chairman and managing director of Bonallack and Sons, Limited, who is looking on.

A conference concerned specifically with transport personnel problems is to be held under the aegis of the Industrial Welfare Society in London on October 13. Mr. D. E. A. Pettit, of S.P.D., Limited, will speak on the basic welfare needs, Dr. A. W. Gilks (L.T.E.) on matters including cab design, fatigue, night vision and mental stress; and Mr. A. C. Glover (Reed Transport, Limited) on safety training. There will be group discussions.



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British Road Services do more than carry loads for you: they'll take the whole transport problem off your hands. A telephone call to B.R.S. takes care of everything. And anything. Big load. Small load. Special load. Or awkward load. You can rely on this nationwide organisation to deliver door-to-door, door-to-dockside or by road across the sea to Northern Ireland and the Continent. B.R.S. not only have the right equipment for the job: but they use it—efficiently. Your goods get the expert handling they deserve. Simply pick up the telephone and...

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IMPORTANT CONTRACTS

Prestwick Runway

WORK on the extension of the main runway at Prestwick Airport was scheduled to start at the end of September under a £240,000 contract awarded to Richard Costain, Limited, by the Ministry of Transport and Civil Aviation. Construction, which includes 2,300 ft. of reinforced concrete runway and perimeter tracks at the seaward end of the existing runway to give a total length of 9,800 ft., should be completed by June, 1960. A quarter of a million cubic yards of imported filling will be required to give the new levels and a large stormwater drainage scheme will also be constructed.

Recent Guy Orders from Overseas

Poland is among overseas countries which, during the past few weeks, have placed orders totalling more than £500,000 for Guy goods and passenger vehicles. Motoimport, of Warsaw, has ordered 11 Invincible six-wheel tipper, following the first appearance in Poland of the new Invincibles at the Poznan Trade Fair in June. A substantial part of the half million pounds total is accounted for by a single order from Johannesburg Municipal Transport Department for a further 20 of the 105-passenger Rolls-Royce diesel-engined double-deck buses, claimed to be the largest of their kind in the world.

Eastern Region Contracts

The Eastern Region of British Railways announces the following contracts:

W. and C. French, Limited, Buckhurst Hill, for a track sectioning cabin at Bishop's Stortford and a feeder station and signal box at Pitsea.

T. Fletcher and Co., Limited, Mansfield, for reconstruction of parapets and spandrel walls and repairs to arches of bridge between Woodhouse and Waleswood.

Pethow, Limited, Sanwich, for one 50-kVA generating set and six 30-kVA generating sets.

Wellerman Bros., Limited, Sheffield, 3 for reconstruction and widening of two bridges between Kelvedon and Colchester.

Edward Holmes and Co. (1931), Limited, Altrincham, for 15 40-amp and four 80-amp, changeover contactor cubicles in connection with the Liverpool Street-Enfield-Chingford-Hertford (East)-Bishop's Stortford and London-Tilbury-Southend electrifications.

A.E.C. Reliance Sales Increased

A.E.C., Limited, announces that orders for the Reliance passenger chassis this year are already 50 per cent higher than last year. Recent orders include those for 22 Reliance for Wallace Arnold Tours, 10 for Greenslade Tours and five for North Western Road Car Company. Substantial orders have also been received from overseas for A.E.C. heavy-duty goods vehicles, including those received this week for 15 vehicles for Kuwait, 10 bonneted Mammoths for North Africa and 10 further bonneted Mammoths for Turkey. Sales of the bonneted Mammoth range are said to be already far in excess of this time last year, orders in the last few weeks having totalled well over £500,000.

Gardner Again for Kowloon

Dodwell and Co., Limited, the well-known organisation which has operated along the China Coast, in the East, and elsewhere for scores of years and has also represented Gardners in Hong Kong for some forty years, announces the placing of an order by Kowloon Motor Bus Company for 20 double-deck Daimler buses powered by the five-cylinder 5LW Gardner diesel. This follows a recent order for Gardner 5LW-powered Guy buses from China Motor Bus Company (MODERN TRANSPORT, September 12) and brings the total of Gardner-engined vehicles dispatched over the years for operation in Hong Kong and Kowloon territories to some 600.

New London Midland Region Contracts

The London Midland Region of British Railways announces the following contracts:

Thomas Storey (Engineers), Limited, Stockport, for girderwork for bridge on Speke Junction and Liverpool Edge Hill line.

Kyle Stewart (Contractors), Limited, Wembley, for repairs to roof coverings at Manchester Exchange Passenger Station, and for raising and strengthening brick walls, etc., of eight bridges on London to Rugby line between Cheddington and Hemel Hempstead.

Rubery Owen and Co., Limited, Darlington, for structural steelwork at Eches Park carriage shed, Derby.

The Harbour and General Works, Limited, Morecambe, for new reinforced concrete dredger quay for Heysham Harbour.

Cementation Co., Limited, London, S.W.1, for bored piles and columns for the reconstruction and widening of bridge at River Esk Viaduct.

S. and C. Walsley, Limited, Liverpool, 10, for steelwork for awnings, screens and roofing at Chester General Station.

Four 99 Ousts Petrol and L.P.G.

The Perkins 1.6-litre Four 99 diesel engine has scored a success in the United States of America, where it is increasingly replacing American petrol and l.p.g. engines used for driving the compressors of refrigerated road vehicles. Already 300 Four 99 engines have been fitted to plant produced by the Transcold Corporation—a leading producer of mobile refrigeration equipment—and a further 300 engines are in course of delivery by the Peterborough company. The Four 99 gives little away in weight to the engines it is displacing and the Americans are said to be impressed by its extremely low fuel consumption and long life between overhauls.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register. Service of information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lecon House, Theobalds Road, London, W.C.1.

October 6—Tunisia.—Ministry of Public Works for 20 5-ton capacity CHASSIS-CARS. Tenders in Sous-arrondissement Central des Routes, Bureau Technique, Route de Zaghouan, Tunis. (ESB/22582/59.)

October 7—Union of South Africa.—Natal Provincial Administration for up to three-wheeled diesel tractor-scraper outfits (170 h.p., 10-12 cu. yd. or 200 h.p., 12-15 cu. yd.) and up to four diesel crawler tractors of 160 h.p. and 20,000 lb. tare. Tenders to the Chairman, Natal Provincial Tender Board, P.O. Box 388, Pietermaritzburg. (ESB/21906 and 21907/59.)

October 7—Union of South Africa.—Natal Provincial Administration for one articulated transporter with 60,000-lb. payload capacity. Tenders to the Chairman, Natal Provincial Tender Board, P.O. Box 388, Pietermaritzburg. (ESB/21909/59.)

October 7—Tunisia.—Ministry of Public Works for 10 wheeled 75-h.p. tractors with bulldozers. Tenders in Sous-arrondissement Central des Routes, Bureau Technique, Route de Zaghouan, Tunis. (ESB/22581/59.)

October 8—Formosa.—International Co-operation Administration for large quantities of materials and components for railway goods wagons. Photocopies of tender documents from Export Services Branch, B.O.T., price 12s. (ESB/21482/59/ICA.)

October 9—Union of South Africa.—South African Railways for eight 15- to 16-seat buses, with spare engine, gearbox and axles excluding tyres, tubes and batteries but including the fitting thereof at point of assembly. Tenders, endorsed "Tender No. F.7968: Vehicles," to the Chairman of the Tender Board, P.O. Box 7784, Johannesburg. (ESB/21724/59.)

October 10—Ethiopia.—Imperial Highway Authority for 12 petrol-engined side-by-side lorries for 10,500 lb. (min.) c.w. Tenders to the Imperial Highway Authority, P.O. Box 1770, Addis Ababa. (ESB/21884/59.)

October 16—Union of South Africa.—Durban Corporation for 25 6-ton chassis and/or motor for earliest delivery and, separately, for 250 similar, 25 for earliest delivery, balance at minimum rate of 20 per annum thereafter. Tenders to the Town Clerk, City Hall, Durban, or photocopies of tender documents from Export Services Branch, B.O.T., price 16s. (ESB/22610/59.)

SHIPPING and SHIPBUILDING

Coal Diverted to Rail

A PROTEST is to be forwarded by Goole Chamber of Commerce and Shipping to the Minister of Transport about the transfer from coastwise shipping to railway carriage of 150,000 tons of coal from Goole and Keadby to Dartmouth, Exmouth and Bideford for use by gas-works in south-west England. The Minister is to be told that this latest transfer of coal from sea to railway transport would intensify an already difficult and serious situation at Goole. The Chamber emphasises that the developments would be yet another blow to coastwise shipping and would result in a further reduction of work and employment at Goole and Keadby. The president, Mr. H. E. Potter, said the picture of coastwise shipping was becoming gloomier each month and declared that the industry was being robbed of its livelihood.

Tasmanian Ferry in Service

THE new Bass Strait ferry, *Princess of Tasmania*, 5,000 tons, has made her maiden voyage between Devonport, Tasmania, and Melbourne, completing the crossing in 11 hours—two hours faster than any previous crossing. Her average speed was 18 knots.

Sunderland Orders Completed

WHEN the 6,000-ton motorship *Manchester* leaves Sunderland later this month the Wear dockyard of Austin and Pickersgill, Limited, will be closed to shipbuilding because there are no further orders for it. As far as possible, the 170 shipyard men still employed at the Wear dockyard will be transferred to the other yard at Southwick-on-Wear. However, repair facilities at the Wear yard are being reconstructed and more labour will be required.

Clyde Unification Urged

UNIFICATION of Clyde port authorities into one body was urged by Mr. John MacLay, Secretary of State for Scotland, when he spoke at the annual inspection of river facilities by the Clyde Navigation Trustees. If Greenock, Glasgow and other authorities on the river could join to operate the river together, he said, they would ensure the success of the graving dock which had been discussed for so long and which was so much desired by all concerned.

Navigation on Swiss Lakes

NAVIGATION on the numerous lakes of Switzerland is expanding with considerable speed. Last July the Lake Lucerne Steamship Company started operating its new 1,000-passenger m.v. *Schwyz*. On Lake Thun the B.L.S. Railway Company introduced the modern 600-passenger m.v. *Niederhorn* early this summer, and the Swiss Federal Railways, which operates services on Lake Constance, announced the remodelling and facelift of the m.v. *Thurgau*. About 20 other operators have plans for new vessels or the modernisation of old ones.

Dover Plans Ahead

DETAILS have been given of the plans Dover Harbour Board has made to extend its car ferry terminal and the provision for one more berth for the cross-Channel vessels at least. This extra berth will mean that three car ferries could load and unload cars and other vehicles at the same time. The new berth also means the extension of the customs and immigration facilities and buildings. Investigations are already being made into the structural work involved, both above and below sea level, by the Harbour Board. The general manager, Mr. Cecil Byford, recently pleaded, in his annual report, for an early decision on the Channel Tunnel project, emphasising that any future development by the Board would have to be considered seriously and even postponed, while the plans for the tunnel still remained a threat.

Pakistan Corporation Formed

ACTING upon a recommendation of the Marine Committee Pakistan is to form a shipping corporation for international trade. The report of the committee, which was appointed in November last by Vice-Admiral H. M. S. Choudhry, former Commander-in-Chief of the Pakistan Navy, as chairman has been released. The committee recommends the formation of an international shipping corporation among existing shipowners by placing good vessels of the Pakistan coastal fleet on foreign routes. According to the Ministry of Commerce, this recommendation has already been implemented. Six of the Pakistan companies have formed a new shipping company—Pakistan Shipping Line, Limited—to operate ships on the Pakistan-United Kingdom-Continent route. The new company, it has stated, will have six ships and has applied for berthing rights in foreign ports.

Firth Cleveland Finance, Limited, announces the recent removal of its head office to 12 Stratford Place, London, W.1. (Telephone Hyde Park 8621.)

The Société Générale de Traction et d'Exploitation, of Paris, has been awarded a contract for the building of an underground railway in São Paulo, Brazil. The contract calls for completion of plans and more detailed surveys in two years at a cost of Cr\$160 million, and of the construction of the railway in the following five years. The total cost of the work has been estimated at Cr\$10,000 million. It will be recalled that a "monorail" scheme was considered two years ago.



The new coat of arms of the Pullman Car Company which was redesigned primarily for the diesel-electric sets but is to be adopted generally. The main design is bronze in colour and quarterings carry the same background colours as in the former coat of arms. The name Pullman appears on a red scroll.

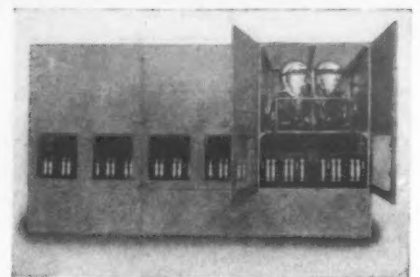
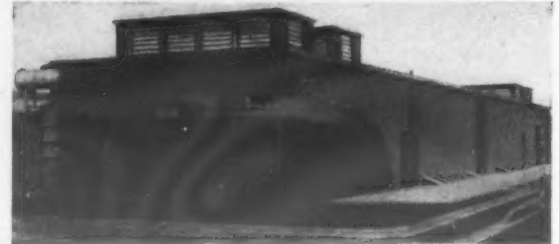
IN TRACTION SERVICE IN
18 COUNTRIES ...

Hewittic
RECTIFIERS

the converting plant used by the World's principal railways

BRITISH RAILWAYS
SOUTHERN REGION

One of 28 substations equipped with Hewittic Rectifiers by the British Transport Commission for the Southern Region of British Railways. The photograph shows Wimbledon substation with one wall cut away to show the two 2,500 kW rectifiers in this half of the building.



LONDON TRANSPORT RAILWAYS

The 4,000 kW Bond Street substation, equipped exclusively with Hewittic Rectifiers. The plant comprises four 1,000 kW combined rectifier and enclosed air-cooled transformer units. This company is also responsible for the supply and installation of all A.C. and D.C. control gear. Some 90,000 kW Hewittic Rectifiers have been supplied to the London Transport Executive.

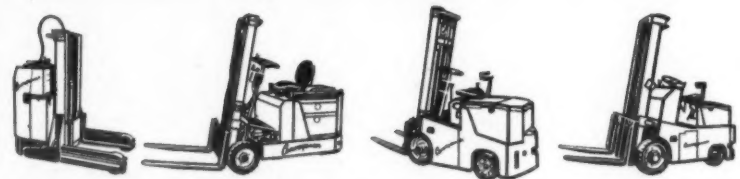
CANADIAN NATIONAL RAILWAYS

The electrified section of the Canadian National Railways, comprising some 70 track miles in the vicinity of Montreal Terminal is supplied with D.C. by Hewittic Rectifiers in two 3,000 kW substations at Central Station and Saragway. The photograph shows one of the four 1,500 kW equipments in service. These are designed for operation at 3,000 volts, D.C.

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WALTON-ON-THAMES · SURREY · ENGLAND

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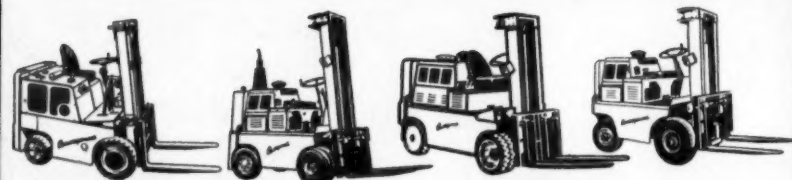
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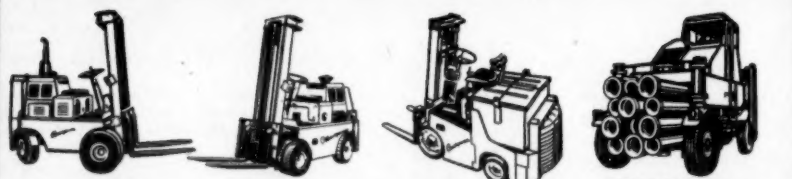
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